

A revision of *Clematis* sect. *Pseudanemone* (Ranunculaceae)

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Abstract *Clematis* sect. *Pseudanemone* is revised in this paper. Sixteen species, three subspecies, and two varieties are recognized. They are keyed, described, and illustrated in most cases, and classified into three series. Brief taxonomic history and geographical distribution of the section are given, and its systematic position and origin are discussed. According to the evolutionary trends of certain morphological characters of leaves, sepals, and anthers, the Madagascan ser. *Pimpinellifoliae* is considered the primitive group, and the other two series, ser. *Villosae* and ser. *Chrysocarpae*, all occurring on the African mainland, the advanced groups.

Key words *Clematis*, sect. *Pseudanemone*, taxonomic revision.

1 Brief taxonomic history

In his revision of the genus *Clematis* L., de Candolle (1818) for the first time described two species of sect. *Pseudanemone*, *C. scabiosaeifolia* DC. and *C. villosa* DC., which were placed in his large and heterogeneous sect. *Flammula*.

In the account of the tribe *Clematideae* made by Spach (1839), no species of sect. *Pseudanemone* was included.

In 1837, Hooker described five species of *Clematis* from Madagascar, *C. trifida* Hook., *C. bojeri* Hook., *C. oligophylla* Hook., *C. pimpinellifolia* Hook., and *C. anethifolia* Hook., all belonging to sect. *Pseudanemone*. Under *C. bojeri* and *C. pimpinellifolia*, Hooker cited in synonymies the manuscript names *Clematopsis suaveolens* Bojer and *Clematopsis pimpinellifolia* Bojer respectively, and pointed out that of these new species "has been constituted a new genus in Mr. Bojer's MSS. under the name of *Clematopsis*", but he was "not aware of any character to warrant such a separation".

In Kuntze's monograph (1885), only one species (*C. villosa* DC.) of sect. *Pseudanemone* was recognized. However, under it the species described by Hooker mentioned above, together with the other two species described by Oliver (1868), were all sunk to subspecific or varietal rank, with four new subspecies and several new varieties described by him. In the diagnosis of *C. villosa*, Kuntze noticed that the sepals are partly valvate and partly imbricate, and the aestivation of sepals was described as "valvata vel imbricata".

In his classification of *Clematis*, at the beginning position, Prantl (1888) established a new section, sect. *Pseudanemone*, which is characterized by having imbricate aestivation of sepals and hairy stamen filaments, and consists of *C. trifida*, *C. oligophylla*, *C. anethifolia*, *C. villosa*, *C. chrysocarpa* Welw. ex Oliv. etc., and in addition another three species, *C. welwitschii* Hiern, *C. commutata* Kuntze, and *C. dissecta* Baker, which are members of sect. *Brachiatae*. On

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the basis of leaf or leaflet division, sect. *Pseudanemone* was subdivided into two groups: 1. *Spathulifoliae* and 2. *Villosae*.

Noticing the peculiar imbricate aestivation of sepals in the *C. villosa* group, in 1920, Hutchinson recognized Bojer's manuscript generic name *Clematopsis*, published it, and placed 15 species occurring in African mainland and Madagascar in it. As to the systematic position and origin of this new genus, he stated that "a valvate aestivation has no doubt been derived from an imbricate one", and that "*Clematis* has probably arisen through *Clematopsis* from the genus *Anemone*" of the tribe *Anemoneae* with imbricate aestivation of sepals.

Afterwards, the genus *Clematopsis* was accepted by authors of various local floras of the African mainland, such as Exell and Mendonca (1937), Staner and Léonard (1950, 1951), Exell et al. (1951), Milne-Redhead & Turrill (1952), and Exell and Milne-Redhead (1960), by botanists dealing with the *Clematis villosa* group, such as Brummitt (1976) and Raynal (1978), and by Tamura in his 1967's classification of the family Ranunculaceae. However, in their accounts of *Clematis* of Madagascar and Comoros, Viguier and Perrier (1949) and Perrier (1950) treated the species of the *Clematis villosa* group still as members of *Clematis* rather than *Clematopsis*. Near the end of the last century, in his revised classifications of the *Clematis* published both in 1987 and 1995, having considered that the imbricate aestivation of sepals in the *Clematis villosa* group is secondary owing to the dilation of sepal margin and that the *Clematis villosa* group might be derived from sect. *Meclatis* in having similar floral structures, Tamura reduced *Clematopsis* into the synonymy of sect. *Pseudanemone*. His reduction was unanimously adopted by Snoeijer (1992), Johnson (1997), Brummitt (2000), and Wang (2000a), while Grey-Wilson (2000) elevated sect. *Pseudanemone* to subgeneric rank.

2 Systematic position

In species of sect. *Pseudanemone*, the sepals are usually four per flower, spreading, usually partly imbricate and partly valvate, usually ovate or broadly ovate, rarely lanceolate, apex acute, acuminate, or attenuate, the stamen filaments are narrowly linear in outline and pubescent, the anthers are usually linear, sometimes oblong, glabrous, and the carpels are densely hairy. With such floral structure, sect. *Pseudanemone* shows considerable resemblance to sect. *Brachiatae* (Wang, 2004b).

As to the aestivation of sepals, in sect. *Pseudanemone* (Kuntze, 1885; Hutchinson, 1920), just as in sect. *Cheiropsis* subsect. *Williamsianae* (Tobe, 1980; Wang, 2001), and in sect. *Aspidanthera* subsect. *Hexapetalae* (Godley, 1977; Wang, 2000b, 2004a), the sepals of a flower are sometimes partly imbricate and partly induplicate-valvate, and this phenomenon appears to indicate that the imbricate aestivation of sepals in the three groups mentioned above might be derived from the valvate aestivation of other more primitive groups of the *Clematis* respectively.

In addition to the partly imbricate aestivation of sepals, sect. *Pseudanemone* is further characterized by having usual suffrutescent erect habit, sometimes thickly papery or subcoriaceous sepals, and often elongate linear anthers up to 7–9.5 mm long. By such distinguishing characters, sect. *Pseudanemone* is considered more advanced than sect. *Brachiatae*, and might be derived from the latter, in which the plants are woody vines, the sepals are valvate, papery in texture, and the anthers are usually narrowly oblong or oblong, 1–4 mm long. So, sect. *Pseudanemone* should be a member of the *C. vitalba* evolutionary stock (Wang, 2003) of the genus *Clematis*.

3 Infrasectional subdivision

In sect. *Pseudanemone*, five species have simple leaves. In *C. trifida*, the basal and lower caudine leaves are simple, pentagonal in outline, palmately 3-sect (Fig. 3:C), and represent the

typical ranunculaceous leaves (Tamura , 1963 , 1995) , which also occur in other three sections of the genus *Clematis* , sect. *Cheiropsis* (*C. acerifolia* Maxim.) , sect. *Viorna* (*C. ranunculoides* Franch.) , and sect. *Archiclematis* (*C. alternata* Kitam. & Tamura).

In another four species with simple leaves , *C. intraglabra* W. T. Wang , *C. uhehensis* Engler , *C. grandifolia* (Staner & Leonard) M. Johnson , and *C. teuspii* (Kuntze) Engler , the leaves are obovate-oblong in outline , undivided , rarely 3-lobed. The remaining species of sect. *Pseudanemone* all have compound leaves , from ternate , pinnate , to 2 – 4-pinnatisect , representing a rather distinct evolutionary trend in leaf division as in sect. *Brachiatae* (Wang , 2004b).

Besides , in the floral structure , several other evolutionary trends are observed : the sepals changing from thinly papery , papery to subcoriaceous in texture , from medium to large in size , their inner surfaces from glabrous to puberulous or velutinous , and the anthers from narrowly oblong to linear , from shorter (2.2 – 4.5 mm long) to more or less lengthened , up to 6 – 9.5 mm long .

In the present revision , mainly on the basis of the indumentum of inner sepal surface and anther length , the species of sect. *Pseudanemone* are classified into three series . Of them , in having glabrous or puberulous inner sepal surfaces and shorter linear or narrowly oblong anthers , the series *Pimpinellifoliae* is considered the primitive group . The other two series , ser. *Villosae* , with velutinous inner sepal surfaces and shorter anthers , and ser. *Chrysocarpace* , with puberulous or velutinous , rarely glabrous inner sepal surfaces and more or less lengthened linear anthers , represent the advanced groups , and might have a common ancestor , the series *Pimpinellifoliae* (Fig. 1).

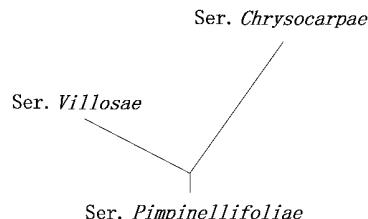


Fig. 1. Diagram showing the putative evolutionary relationships of the three groups of sect. *Pseudanemone* .

4 Geographical distribution

In the present revision , 16 species , 3 subspecies , and 2 varieties of the section *Pseudanemone* are recognized , and they fall into three groups as mentioned above . Of them , the primitive group , ser. *Pimpinellifoliae* , consists of seven species , all concentrated in the central montane regions of Madagascar (Raynal , 1978) . The second group , ser. *Villosae* , consists of three species , widespread on central and southern African mainland . Of the three species , *C. villosa* with three subspecies is a polymorphic one , and occupies the greater part of the distribution area of the series *Villosae* (Exell et al. , 1951) ; *C. africolineariloba* W. T. Wang is a stenochoric species , restricted in geographical distribution to Kyimbila , Tanzania ; and *C. stanleyi* Hook. occurs in the southern part of the distribution area of ser. *Villosae* , in Angola , Botswana , Zimbabwe , and northern South Africa . The third group , ser. *Chrysocarpace* , consists of six species . Of them , *C. uhehensis* Engler and *C. chrysocarpa* ssp. *bijuga* Brummitt are distributed on southeastern African mainland ; *C. intraglabra* W. T. Wang , *C. teuspii* (Kuntze) Engler , and *C. chrysocarpa* ssp. *chrysocarpa* are all confined to Angola ; and both *C. grandifolia* (Staner & Léonard) M. Johnson and *C. katangensis* (Hutch.) M. Johnson are endemic to southern Zaire (Fig. 2).

Probably being derived from sect. *Brachiatae* as mentioned above , sect. *Pseudanemone* might originate from Madagascar , which is situated within the archipelagic region of Comoros , Madagascar and Mascarene , the possible center of origin of sect. *Brachiatae* (Wang , 2004b). According to Raven & Axelrod (1974) , Madagascar separated from African mainland about 100 m.y. BP . Then , ser. *Villosae* and ser. *Chrysocarpace* might originate from ser. *Pimpinellifoliae* , and migrate from

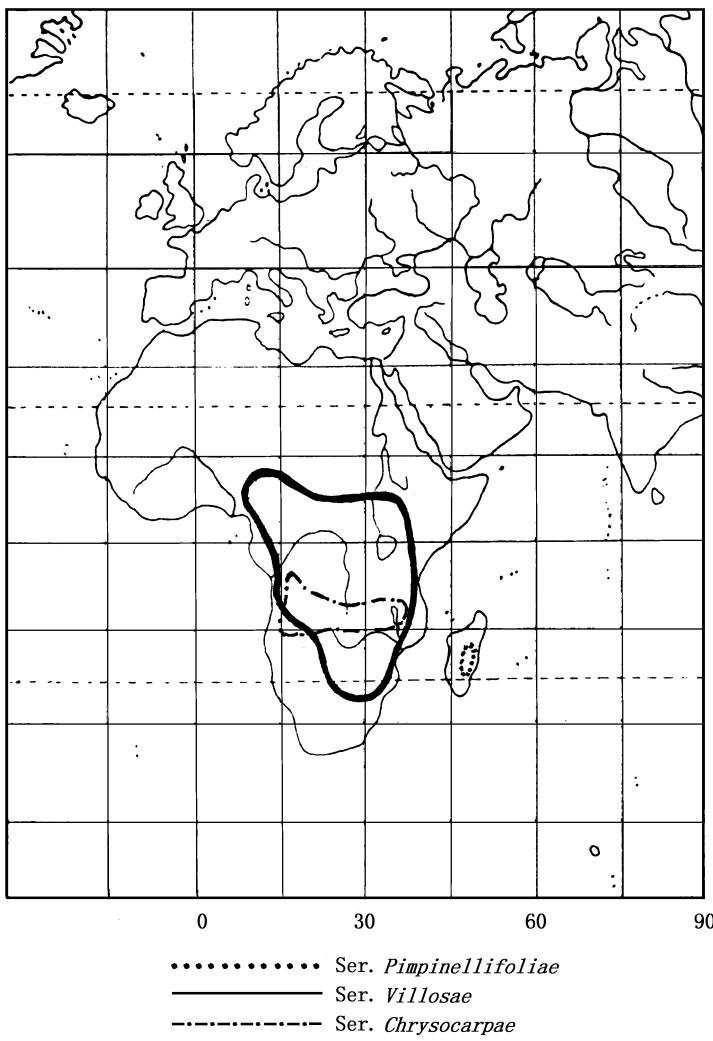


Fig. 2. Map showing distribution of the three series of sect. *Pseudanemone*.

Madagascar to African mainland not long after the separation of them nearly at the beginning of the Tertiary.

5 Taxonomic treatment

Clematis L. sect. **Pseudanemone** Prantl in Bot. Jahrb. 9:257. 1888, p.p. excl. *C. welwitschii* Hiern, *C. commutata* Kuntze et *C. dissecta* Baker; et in Engler & Prantl, Nat. Pflanzenfam. 3(2):43. 1888; Tamura in Acta Phytotax. Geobot. 38:40. 1987; et in Heipko, Engler's Nat. Pflanzenfam., ed. 2, 17a(4):376. 1995; Snoeijer in Clematis 1992:12. 1992; M. Johnson, Klematis 140. 1997; Brummitt in Kew Bull. 55:102. 2000; W. T. Wang in Acta Phytotax. Sin. 38:424. 2000. Lectotype: *C. pimpinellifolia* Hook. (Tamura, 1995).

Clematopsis Bojer ex Hutch. in Bull. Misc. Inform. Kew 1920:12. 1920 et 1923:89. 1923; Exell & Mendonca in Carrisso, Consp. Fl. Angol. 1:4. 1937; Staner & Léonard in Bull. Soc. R. Bot. Belg. 82:338. 1950; et in Robyns, Fl. Congo Belg. Ruand.-Urund. 196. 1951;

Exell et al. in Bull. Soc. R. Bot. Belg. 83: 47. 1951; Tamura in Sci. Rep. Osaka Univ. 16 (2): 31. 1967; Brummitt in Kew Bull. 31 (1): 156. 1976; Raynal in Adansonia, ser. 2, 18 (1): 3. 1978.

Clematis subgen. *Pseudanemone* Grey-Wils., *Clematis* 195. 2000, nom. seminud.

Subshrubs, rarely small shrubs, with erect stems. Seedling leaves alternate (known from *C. anethifolia*, *C. villosa* ssp. *villosa* and ssp. *kirki* (Oliv.) Brummitt, Essig, 1991). Leaves rarely basal, usually caudine only, opposite, rarely 3–4 verticillate, simple, ternate, pinnate, or 2–4-pinnatisect. Flowers bisexual, medium-sized or large, solitary or in cymes. Sepals 4(–5–6), petaloid, usually partly imbricate and partly induplicate-valvate, spreading, thinly papery, papery, or subcoriaceous, broadly ovate, ovate, or lanceolate. Stamens numerous; filaments narrowly linear, pubescent; anthers linear or narrowly oblong, glabrous; connectives not projected, rarely slightly projected at apex (*C. teuszii*). Carpels numerous. Achenes compressed, but not flattened, with long plumose persistent styles.

Ca. 16 species, distributed in Madagascar and African mainland.

In the last century, botanists dealing with the *C. villosa* group had strongly different species concepts. For example, in the belief that "the entities recognizable in Madagascar are narrowly sympatric and do not deserve higher a rank than varietal", Raynal (1978), accepting the genus *Clematopsis*, sunk *C. oligophylla* Hook. and *C. anethifolia* Hook. to varietal rank under *C. bojeri* Hook., and reduced *C. trifida* Hook. and *C. pimpinellifolia* Hook. to the synonymy of *C. bojeri*. In the present revision, on the basis of certain reliable morphological characters I attempt to classify the plants of the *C. villosa* group to the following 16 species, in which the species described by Hooker are all reinstated. However, as to the final elucidation of the relationships among the various variable species of the *C. villosa* group I agree with Raynal (1978) that "a thorough biosystematic study is highly desirable", and with Brummitt (2000) that "molecular studies would resolve the question convincingly".

Key to infrasectional taxa

1. Anthers linear or narrowly oblong, 2.2–4.5(–5) mm long.
 2. Sepals inside glabrous or sparsely puberulous or puberulous; anthers 2.2–4 mm long; Madagascan species...
 - Ser. 1. **Pimpinellifoliae**
 3. Leaves simple, 3-sect, 3-lobed, or undivided
 4. Sepals broadly ovate or ovate, apex emarginate or acute, inside glabrous
 - 1a. var. **trifida**
 4. Sepals broadly lanceolate, apex long acuminate or attenuate, inside sparsely puberulous
 - 1b. var. **lanceolata**
 3. Leaves compound.
 5. Leaves ternate or 5-foliolately pinnate.
 6. Leaves ternate.
 7. Terminal leaflet 3-lobed, abaxially sparsely pubescent or glabrescent; terminal cymes 1–3-flowered
 - 2. **C. macrophylla**
 7. Terminal leaflet 3-parted or 3-sect, abaxially pubescent, densely pubescent or pannose.
 8. Leaflets abaxially pubescent or densely pubescent; terminal cymes 3–7-flowered
 - 3. **C. bojeri**
 8. Leaflets abaxially densely silvery-sericeous-pannose; terminal cymes 5-flowered
 - 4b. **C. pseudoscabiosifolia** var. **sericeopannosa**
 6. Leaves 5-foliolately pinnate
 5. Leaves 2–4-pinnatisect.
 9. Leaf ultimate lobes linear, 0.8–6 mm broad; sepals outside pubescent.
 10. Leaves abaxially densely silvery-sericeous-pannose

..... 4a. *C. pseudoscabiosifolia* var. *pseudoscabiosifolia*

10. Leaves abaxially pubescent.

11. Sepals inside glabrous ; stem usually simple , with 2 – 3 remote pairs of leaves ; leaf ultimate lobes 0.8 – 2 mm broad 5. *C. oligophylla*

11. Sepals inside puberulous ; stem branched , with more pairs of leaves ; leaf ultimate lobes 2 – 6 mm broad 6. *C. pimpinellifolia*

9. Leaf ultimate lobes narrowly linear or subfiliform , 0.2 – 0.3 mm broad ; sepals outside glabrous ...

..... 7. *C. anethifolia*

2. Sepals inside velutinous or densely puberulous ; anthers 2.5 – 4(– 5) mm long ; leaves pinnate or 1 – 3-pinnatisect ; African species Ser. 2. *Villosae*

12. Leaves pinnate

13. Leaflets abaxially velutinous ; terminal cymes 5 – 7(– 20)-flowered 8a. ssp. *villosa*

13. Leaflets abaxially pubescent.

14. Terminal cymes 3 – many-flowered

14. Terminal cymes 1-flowered

12. Leaves 1 – 3-pinnatisect , with triangular to linear ultimate lobes.

15. Leaves 1 – 2-pinnatisect , ultimate lobes adaxially glabrous , abaxially on veins pilose ; flowers solitary , terminal ; stem simple , sparsely pilose , with hairs 0.6 – 1 mm long 9. *C. africolineariloba*

15. Leaves 3-pinnatisect , ultimate lobes on both surfaces more or less densely appressed-pubescent ; flowers usually in terminal 3 – 5-flowered cymes , rarely solitary ; stem simple or above branched , densely pubescent , with hairs 1 – 2 mm long 10. *C. stanleyi*

1. Anthers linear , rarely narrowly oblong , up to 5.8 – 9.5 mm long ; African species Ser. 3. *Chrysocarpe*

16. Leaves simple.

17. Sepals inside glabrous ; uppermost leaves 3 verticillate , 3-parted

17. Sepals inside puberulous or velutinous ; leaves undivided or 3-lobed.

18. Flowers solitary , terminal.

19. Stem covered with hairs up to 1 – 1.2 mm long ; sepals inside velutinous or densely puberulous ; anthers linear or narrowly oblong , 4 – 5.8 mm long ; leaves all opposite

19. Stem covered with hairs up to 3 – 4 mm long ; sepals inside sparsely puberulous ; anthers linear , 6 – 7 mm long ; upper or uppermost leaves often 3 – 4 verticillate

18. Flowers in terminal 5 – 7-flowered cymes ; stem covered with hairs 0.3 – 0.6 mm long ; leaves all opposite ; anthers 4 – 8 mm long

16. Leaves ternate or pinnate.

20. Stem yellowish pubescent , with hairs 0.6 – 1.2(– 1.6) mm long ; leaflets oblanceolate or obovate-oblong , 0.5 – 2.5 cm broad ; sepals ovate or elliptic-ovate , outside not ribbed ; anthers 3.5 – 7 mm long ; persistent styles tawny-plumose

21. Leaves 3(– 5)-foliolate ; sepals 3.2 – 5.5(– 7) cm long , inside sparsely puberulous ; anthers 6 – 7 mm long ; achenes oblanceolate , 9 – 11 mm long

21. Leaves (3 –)5(– 7)-foliolate ; sepals smaller , 2 – 3.2 cm long , inside densely puberulous ; anthers usually smaller , 3.5 – 5(– 7) mm long ; achenes shorter , obovate , 3.4 – 4.5 mm long

..... 15b. ssp. *bijuga*

20. Stem white puberulous , with hairs 0.2 – 0.8 mm long ; leaflets obovate-oblong , 2 – 3.6 cm broad ; sepals broadly ovate , on both surfaces velutinous , outside with 5 prominent ribs ; anthers 8 – 9.5 mm long ...

..... 16. *C. katangensis*

Ser. 1. **Pimpinellifoliae** W. T. Wang , ser. nov. Type : *C. pimpinellifolia* Hook.

Sepala papyracea vel tenuiter papyracea , intus glabra , sparse puberula , vel puberula. Antherae lineares vel anguste oblongae , 2.2 – 4 mm longae.

Sepals papery or thinly papery , inside glabrous , sparsely puberulous , or puberulous. Anthers linear or narrowly oblong , 2.2 – 4 mm long.

Seven species, endemic to Madagascar.

1. *Clematis trifida* Hook., Icon. Pl. 1:t. 79. 1837; Durand & Schinz, Consp. Fl. Afr. 1(2):7. 1898; Viguier & Perrier in Mém. Inst. Sci. Madag., ser. B, 2(2):228. 1949; Perrier in Humbert, Fl. Madag. Comor. 76^e Fam. Renonculac. 18, fig. 5. 1950; W. T. Wang in Acta Phytotax. Sin. 38:424. 2000. — *C. villosa* DC. ssp. *trifida* (Hook.) Kuntze in Verh. Bot. Ver. Brand. 26:173. 1885. — *Clematopsis trifida* (Hook.) Hutch. in Bull. Misc. Inform. Kew 1920:20, pl. 1, fig. 2. 1920. Type: Madagascar. Without precise locality, Lyall s. n. (holotype, K!).

Clematopsis bojeri (Hook.) Raynal in Adansonia, ser. 2, 18(1):8. 1978, p. p. quoad syn. *C. trifida* Hook.

Clematis bojeri auct. non Hook. : M. Johnson, Klematis 146. 1997, p. p. quoad syn. *C. trifida* Hook.

This species consists of two varieties confined to Madagascar.

1a. var. *trifida*

Fig. 3:C, D

Small subshrub. Stem ca. 30 cm tall, shallowly 6–8-sulcate, sparsely pubescent, simple or below branched, with ca. 3 remote pairs of simple leaves, from base often with a pair of sterile branches ca. 15 cm long, above densely yellowish pubescent, and with 3 pairs of pentagonal, 3-sect leaves each. Leaves of flowering stem different in shape and size: the lower leaves with petioles ca. 16 mm long, their blades coriaceous, pentagonal in outline, 2–2.5×3–4 cm, base coriaceous, 3-sect, the middle segment petiolulate, rhombic, 3-lobed, margin dentate, the lateral segments sessile, smaller, oblique, unequally 2-parted, on both surfaces sparsely pubescent; the middle leaves similar to the lower ones, but with shorter petioles and sessile middle segments; the upper leaves rhombic or orbicular-ovate in outline, margin incised-denticulate or subentire, undivided or 3-lobed. Flower solitary, terminal, 5–7 cm in diam. Sepals 4, white, broadly ovate or ovate, 3–4×1.8–2.3 cm, apex emarginate or acute, inside glabrous, outside appressed-pubescent, along margin with dense hairs. Stamens 10–13 mm long; filaments narrowly linear, pubescent; anthers linear, 2.6–3.4 mm long, apex obtuse. Ovaries densely pubescent; styles ca. 11 mm long, densely villous. Fl. Oct.–Dec.

Madagascar. On grassy slopes.

Additional specimens examined.

Madagascar. Between Imbositra and Itsimatahodalana, Forsyth-Major 714 (K, US); Ambositra, Boiteas 333 (P); Imerina: Andrangoloaka, Hildebrandt 3687 (G-Boiss, K, LE).

1b. var. *lanceolata* W. T. Wang in Acta Phytotax. Sin. 38:424. 2000. Type: Central Madagascar. Without precise locality, 1817, Baron s. n. (holotype, K!).

Fig. 3:E, F

This variety differs from var. *trifida* in its sepals broadly lanceolate, apex long acuminate or attenuate, inside pilose.

Madagascar.

Unclear species: *Clematis longipes* Freyn in Brem. Abhandl. 8:5. 1880. — *C. villosa* DC. ssp. *trifida* (Hook.) Kuntze var. *longipes* (Freyn) Kuntze in Verh. Bot. Ver. Brand. 26:173. 1885. Type: unknown.

2. *Clematis macrophylla* (Raynal) W. T. Wang in Acta Phytotax. Sin. 38:425, fig. 4:1–3. 2000. — *Clematopsis bojeri* (Hook.) Raynal var. *macrophylla* Raynal in Adansonia, ser. 2, 18(1):10, pl. 1, fig. 3. 1978. — *Clematis bojeri* Hook. var. *macrophylla* (Raynal) M. Johnson, Klematis 147. 1997; Brummitt in Kew Bull. 55(1):106. 2000; Grey-Wils., Clematis 199.

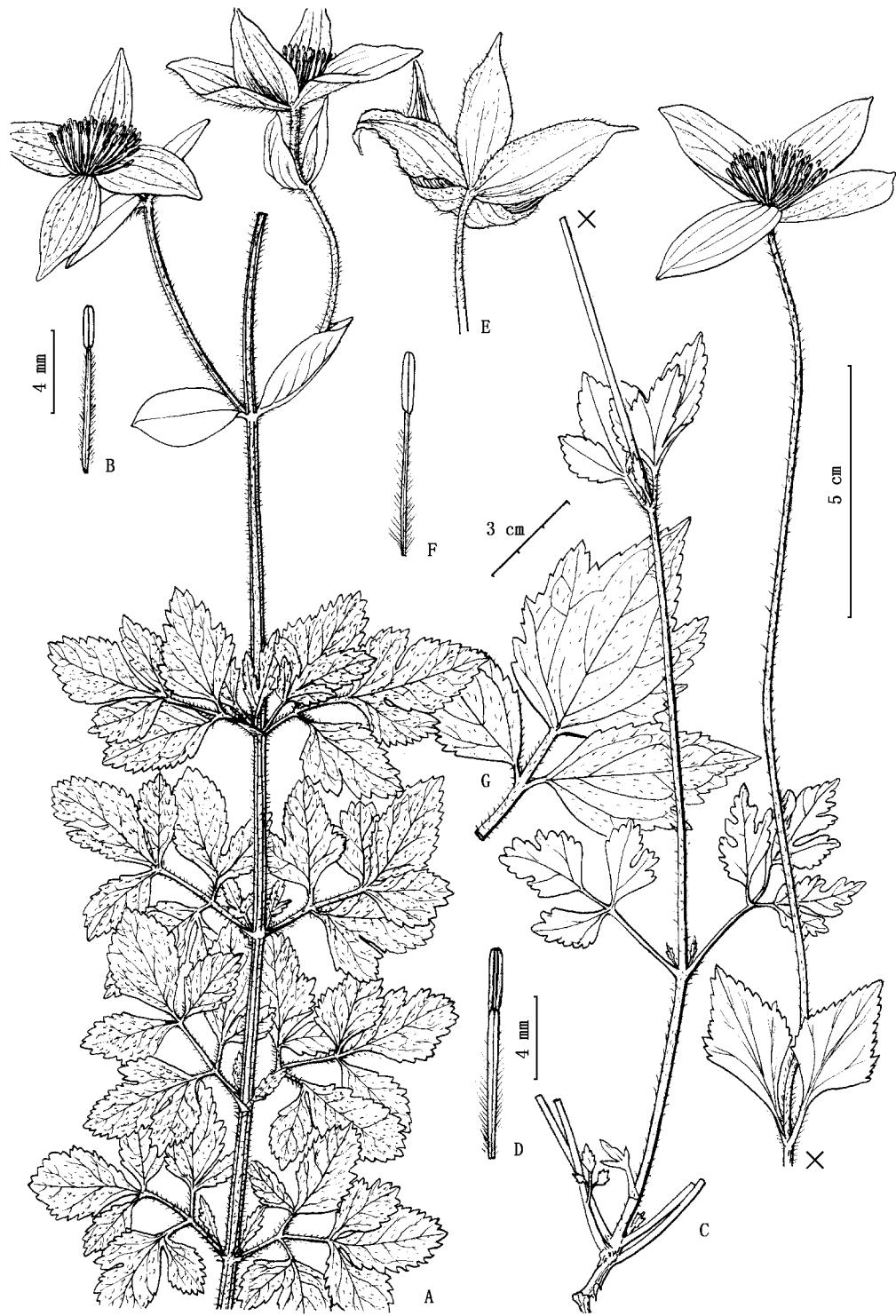


Fig. 3. A, B, *Clematis bojeri* Hook. A, upper part of flowering stem; B, stamen (from Fox s.n.). C, D, *C. trifida* Hook. var. *trifida*. C, habit; D, stamen (from Forsyth-Major s.n.). E, F, *C. trifida* var. *lanceolata* W. T. Wang. E, flower; F, stamen (from Baron s.n.). G, a leaf of *C. macrophylla* (Raynal) W. T. Wang (from Perrier 143498).

2000. Type : Madagascar. Mt. Andringitra, alt. 1800–2000 m, 1922-02, Perrier 14349B (holotype, P!).

Clematis mauritiana Lam. fa. *Clematopsis* Perrier in Humbert, Fl. Madag. Comor. 76^e Fam. Renonculac. 16, fig. 4:5. 1950, p.p.

Fig. 3:G

Small subshrub. Stem ca. 50 cm tall, pubescent. Leaves ternate; leaflets papery, broadly ovate or elliptic-ovate, 4–7.5 × 2.5–5.8 cm, apex acute, base broadly cuneate or rounded, margin coarsely dentate, 3-lobed, adaxially sparsely pilose or subglabrous, abaxially on veins pubescent or pilose, basal veins abaxially prominent; petioles 1.2–1.8 cm long. Cymes terminal, 1–3-flowered; bracts stalked, broadly ovate or ovate, 2.5–3 cm long, dentate, 3-lobed or undivided. Flower 5–6 cm in diam.; pedicel 2–9 cm long, densely tawny-pubescent. Sepals 4(–5), broadly ovate or broadly elliptic, 2.5–3 × 1.4–2 cm, apex shortly caudate or acuminate, inside sparsely and outside densely appressed-pubescent. Stamens 10–12 mm long; filaments narrowly linear, pubescent; anthers narrowly oblong or linear, 2.8–3.8 mm long, apex obtuse. Ovaries densely pubescent; styles ca. 12 mm long, densely villous. Fl. Jan.–Feb.

Madagascar. Alt. 1800–2500 m.

Additional specimens examined.

Madagascar. Mt. Andringitra, Humbert 3795 (P); Ambalavao, Rayafuidrakoto 2117 (P); Andohauana, Guillaumet 3750 (P).

3. *Clematis bojeri* Hook., Icon. Pl. 1:t. 10. 1837; Durand & Schinz, Consp. Fl. Afr. 1(2): 1898; Brummitt in Kew Bull. 55(1):105. 2000; Grey-Wils., Clematis 198. 2000, p.p. excl. syn. *C. pimpinellifolia* Hook. — *C. villosa* DC. ssp. *normalis* var. *bojeri* (Hook.) Kuntze in Verh. Bot. Ver. Brand. 26:173. 1885. — *Clematopsis bojeri* (Hook.) Raynal in Adansonia 18(1):8. 1978, p.p. excl. syn. *C. trifida* Hook. et *C. pimpinellifolia* Hook. Type : Madagascar. Without precise locality, Lyall s.n. (holotype, K!; isotype, BM!).

Clematopsis suaveolens Bojer ex Hook., l.c. sub t. 10, nom. nud.

Clematis villosa DC. ssp. *emirnensis* Kuntze in l.c. — *C. emirnensis* (Kuntze) Prantl in Bot. Jahrb. 9:258. 1888; Durand & Schinz, Consp. Fl. Afr. 1(2):3. 1898. Type : Madagascar. Emirena, Bojer s.n. (syntype, P!), Hildebrandt 3877c (syntype, G!).

C. villosa ssp. *stanleyi* var. *hirsuta* Kuntze in l.c. 174. — *C. stanleyi* Hook. var. *hirsuta* (Kuntze) Durand & Schinz, Consp. Fl. Afr. 1(2):6. 1898. Type : Madagascar. Without precise locality, Baron 2004 (lectotype, K—Brummitt, 2000; isolectotype, P!).

C. mauritiana Lam. fa. *Clematopsis* Viguier & Perrier in Mem. Inst. Sci. Madag., ser. B, 2(2):224. 1949; Perrier in Humbert, Fl. Madag. Comor. 76^e Fam. Renonculac. 16. 1950, p.p.

Fig. 3:A, B

Small subshrub. Stem ca. 40 cm tall, 6-angulate, densely pubescent, simple. Leaves ternate or 5-foliately pinnate; leaflets coriaceous, deltoid-ovate or ovate, 1.6–3 × 1.3–3.5 cm, apex obtuse or acute, base subcordate, truncate, or broadly cuneate, terminal leaflet 3-sect or 3-parted, lateral ones unequally 2-parted or 2-lobed, margin denticulate, adaxially appressed-pubescent, abaxially on veins pubescent, basal veins abaxially prominent; petioles 4–12 mm long. Cymes terminal, 3–7-flowered. Flower 4–5 cm in diam.; pedicel 1.4–3.5 cm long, densely yellowish-pubescent. Sepals 4, narrowly ovate, 2–2.5 × 1–1.3 cm, apex acuminate, inside puberulous, outside densely appressed-pubescent, margin velutinous. Stamens 8–12 mm long; filaments narrowly linear, densely pubescent; anthers linear or narrowly oblong, 2.8–4 mm long, glabrous,

apex obtuse. Ovaries densely puberulous; styles 9–12 mm long, densely villous. Achenes narrowly rhombic-ovate, ca. 3.5 × 1.5 mm, puberulous, narrowly rimmed; persistent styles ca. 4 cm long, plumose. Fl. Aug. to Mar. of the next year.

Madagascar. On grassy slopes; alt. ca. 1600 m.

Additional specimens examined.

Madagascar. Ambohimanga, Waterlot 60 (P); Amboitra, Decary 17270 (P); Andringitra, Elliot 1824 (K); Antsirabe, Perrier 4909, 4924 (P), Humbert 7132 (K, P); Stasy, Aymoin 25410 (P); lac d'Andraikiba, Forsyth-Major s.n. (US); Mayakandriana, Waterlot 723 (P); Tananarive, Alleigette 293, Decary 2505, Guillaumet 2431 (P); without precise locality, Baron 690 (K).

4. *Clematis pseudoscabiosifolia* Perrier in Not. Syst. 14: 309. 1953. — *Clematopsis bojeri* (Hook.) Raynal var. *pseudoscabiosifolia* (Perrier) Raynal in Adansonia 18(1): 10. 1978, p.p. excl. pl. 1: 5. — *Clematis bojeri* Hook. var. *pseudoscabiosifolia* (Perrier) M. Johnson, Klematis 146. 1997; Brummitt in Kew Bull. 55: 106. 2000; Grey-Wils., Clematis 199. 2000. — *C. pimpinellifolia* Hook. var. *pseudoscabiosifolia* (Perrier) W. T. Wang in Acta Phytotax. Sin. 38: 427. 2001. Type: Madagascar. Ambatofangena, 1911–10, Perrier 4915 (holotype, P!); without precise locality, 1887, Baron s.n. (paratype, P!).

C. scabiosifolia auct. non DC. : Viguier & Perrier in Mém. Inst. Sci. Madag., ser. B, 2(2): 229. 1949, p.p.; Perrier in Humbert, Fl. Madag. Comor. 76^e Fam. Renonculac. 20, fig. 6: 1. 1950, p.p. excl. Decary 12997, 13024, Humbert & Swingle 4782.

This species consists of two varieties endemic to Madagascar.

4a. var. *pseudoscabiosifolia*

Fig. 4: E, F

Small subshrub. Stem ca. 50 cm tall, simple or above with a pair of branches about 10 cm long, indistinctly 6-angulate, densely appressed-pubescent, with about 12 pairs of leaves. Leaves usually 2-pinnatisect, upper leaves sometimes ternate; leaf blade subcoriaceous, deltoid in outline, 3–5.5 × 2.5–4.5 cm; pinnae 2–3 pairs, shortly stalked, unequally parted or lobed, ultimate lobes narrowly triangular or broadly linear, 1–2.5 mm broad, apex often apiculate, adaxially appressed-pubescent, abaxially silvery-sericeous-pannose; petioles nearly wanting or present, 2–9 mm long. Flowers solitary, terminal, or in 5-flowered cymes, ca. 3.5 cm in diam.; pedicel 1.5–7 cm long, densely pubescent. Sepals 4, ovate, ca. 2 × 1.1 cm, apex acute or acuminate, inside sparsely appressed-puberulous, outside very densely sericeous-pubescent. Stamens ca. 9 mm long; filaments narrowly linear, pubescent; anthers broadly linear, 2.5–2.8 mm long, apex obtuse. Ovaries densely puberulous; styles ca. 10 mm long, densely villous. Achenes compressed, long elliptic, ca. 3.2 × 1.2 mm, puberulous; persistent styles ca. 3 cm long, plumose. Fl. Oct. to Jan. of the next year.

Madagascar. In mountain regions; alt. 1400–1900 m.

Additional specimens examined.

Madagascar. Ambatofinandrahana, Decary 12941 (P); Antsahapandrano: Ankaratra, Decary 17582 (BR).

4b. var. *sericeopannosa* (W. T. Wang) W. T. Wang, st. nov. — *C. sericeopannosa* W. T. Wang in Acta Phytotax. Sin. 39: 335, fig. 8. 2001. Type: Madagascar. Ambatofinandrahana, alt. 1600–1800 m, 1938-02-16, Decary 12997 (holotype, P!); the same locality, 1938-02-17, Decary 13024 (paratypes, BR!, P!); Ambositra, Mt. Vatomavy, 1928-07-23, Humbert & Swingle 4782 (paratype, P!).

C. scabiosifolia auct. non DC. : Perrier in Humbert, Fl. Madag. Comor. 76^e Fam. Renonculac. 20, fig. 4. 1950.

Fig. 4: A–D

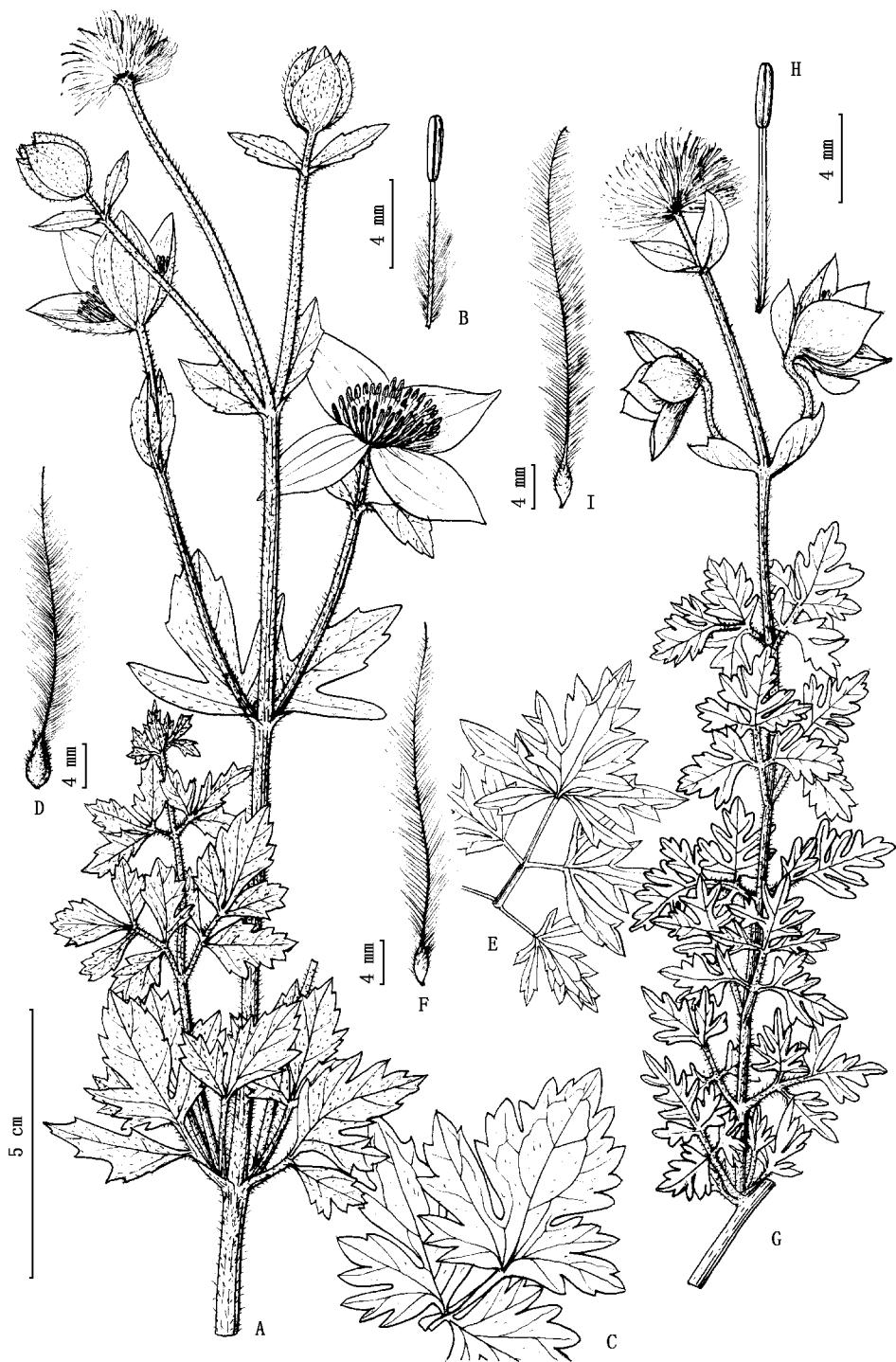


Fig. 4. A - D, *Clematis pseudoscabiosifolia* Perrier var. *sericeopannosa* (W. T. Wang) W. T. Wang. A, upper part of flowering stem ; B, stamen (from Decary 12997) ; C, leaf ; D, achene (from Humbert & Capuron 28046). E, F, C. *pseudoscabiosifolia* var. *pseudoscabiosifolia*. E, leaf ; F, achene (from Decary 12941). G - I, *C. pimpinellifolia* Hook. G, flowering branch ; H, stamen ; I, achene (from Hildebrandt 3877).

Clematopsis bojeri (Hook.) Raynal var. *pseudoscabiosifolia* (Perrier) Raynal in Adansonia 18 (1) : 10. 1978 , p. p. quoad Decary 13024 et pl. 1 : 5.

This variety differs from var. *pseudoscabiosifolia* in its leaves ternate , leaflets 2 – 3-lobulate or 2 – 3-lobed , and achenes ovate.

Leaflets ovate or subrhombic , 1.8 – 3.8 × 1.2 – 2.5 cm , denticulate or dentate , terminal ones shortly petiolulate , lateral ones subsessile. Flowers in terminal 5-flowered cymes , 3.7 – 4.2 cm in diam. Sepals white , elliptic or broadly elliptic , 2 – 2.3 × 1.2 – 1.4 cm , inside appressed-pubescent , outside velutinous. Achenes 4 × 2.2 mm. Fl. Feb.

Madagascar. In montane regions ; alt. 1400 – 1800 m.

C. pseudoscabiosifolia is related to *C. bojeri* and *C. pimpinellifolia* , but differs in its peculiar sericeous-pannose indumentum on the abaxial surfaces of leaves. In the remaining species of the genus *Clematis* , only in *C. delavayi* Franch. , an endemic of Southwest China , the abaxial surfaces of the leaves are also covered with the beautiful sericeous-pannose indumentum (Wang , 2003).

5. *Clematis oligophylla* Hook. , Icon. Pl. 1 : t. 80. 1837 ; Durand & Schinz , Consp. Fl. Afr. 1 (2) : 5. 1898 ; W. T. Wang in Acta Phytotax. Sin. 38 : 427. 2000. — *C. villosa* DC. ssp. *oligophylla* (Hook.) Kuntze in Verh. Bot. Ver. Brand. 26 : 173. 1885. — *Clematopsis oligophylla* (Hook.) Hutch. in Bull. Misc. Inform. Kew 1920 : 22 , pl. 1 , fig. 3. 1920. — *Clematopsis bojeri* (Hook.) Raynal var. *oligophylla* (Hook.) Raynal in Adansonia 18 (1) : 42 , pl. 1 , fig. 7. 1978. — *Clematis bojeri* Hook. var. *oligophylla* (Hook.) M. Johnson , Klematis 147. 1997 ; Brummitt in Kew Bull. 55 : 106. 2000 ; Grey-Wils. , Clematis 199. 2000. Type : Madagascar. Emirena , Bojer s. n. (holotype , K ; isotypes , BM !, P !).

C. villosa DC. ssp. *backeri* Kuntze in l. c. — *C. backeri* (Kuntze) Prantl in Bot. Jahrb. 9 : 258. 1888 ; Durand & Schinz , Consp. Fl. Afr. 1 (2) : 1. 1898. Type : Madagascar. Andnanyylvaka , 1880-03 , Hildebrandt 3687 (holotype , P !).

C. pimpinellifolia auct. non Hook. : Viguier & Perrier in Mem. Inst. Sci. Madag. , ser. B , 2 (2) : 232. 1949 , p. p. quoad syn. *C. oligophylla* Hook. ; Perrier in Humbert , Fl. Madag. Comor. 76^e Fam. Renonculac. 24. 1950 , p. p. quoad syn. *C. oligophylla* Hook.

C. pimpinellifolia fa. *Clematopsis* Perrier in Humbert , l. c. 24 , fig. 9 : 4 – 7.

Fig. 5 : A – C

Small subshrub. Stem ca. 50 cm tall , shallowly 10-sulcate , sparsely pubescent , usually simple , with 2 – 3 remote pairs of leaves. Leaves shortly petiolate , 2 – 4-pinnatisect ; leaf blade coriaceous , broadly ovate , 2 – 4.5 × 1.5 – 3.5 cm , with 1 – 3 pairs of pinnae , ultimate lobes narrowly triangular or linear , 0.8 – 2 mm broad , on both surfaces sparsely appressed-pubescent , midribs abaxially slightly prominent ; petioles 0.5 – 1.5 cm long , sparsely or densely pubescent. Flower solitary , terminal , 5 – 7 cm in diam. Sepals 4(– 6) , ovate , 2.4 – 4 × 1.3 – 1.8 cm , apex acute , inside glabrous , outside appressed-pubescent , along margin with dense hairs. Stamens 1.1 – 1.3 cm long ; filaments narrowly linear , margin villous ; anthers linear , 3 – 3.2 mm long , apex obtuse. Ovaries densely puberulous ; styles ca. 1.2 cm long , densely villous. Achenes compressed , narrowly obovate , ca. 3.5 × 1.8 mm , pubescent , narrowly rimmed ; persistent styles ca. 3 cm long , plumose. Fl. Oct. – Dec.

Madagascar. In bushes ; alt. 1400 – 2000 m.

Additional specimens examined.

Madagascar. Ambositra , Forsyth-Major 714 (G) , Hier 2235 (P) ; Andvangvloaka ,

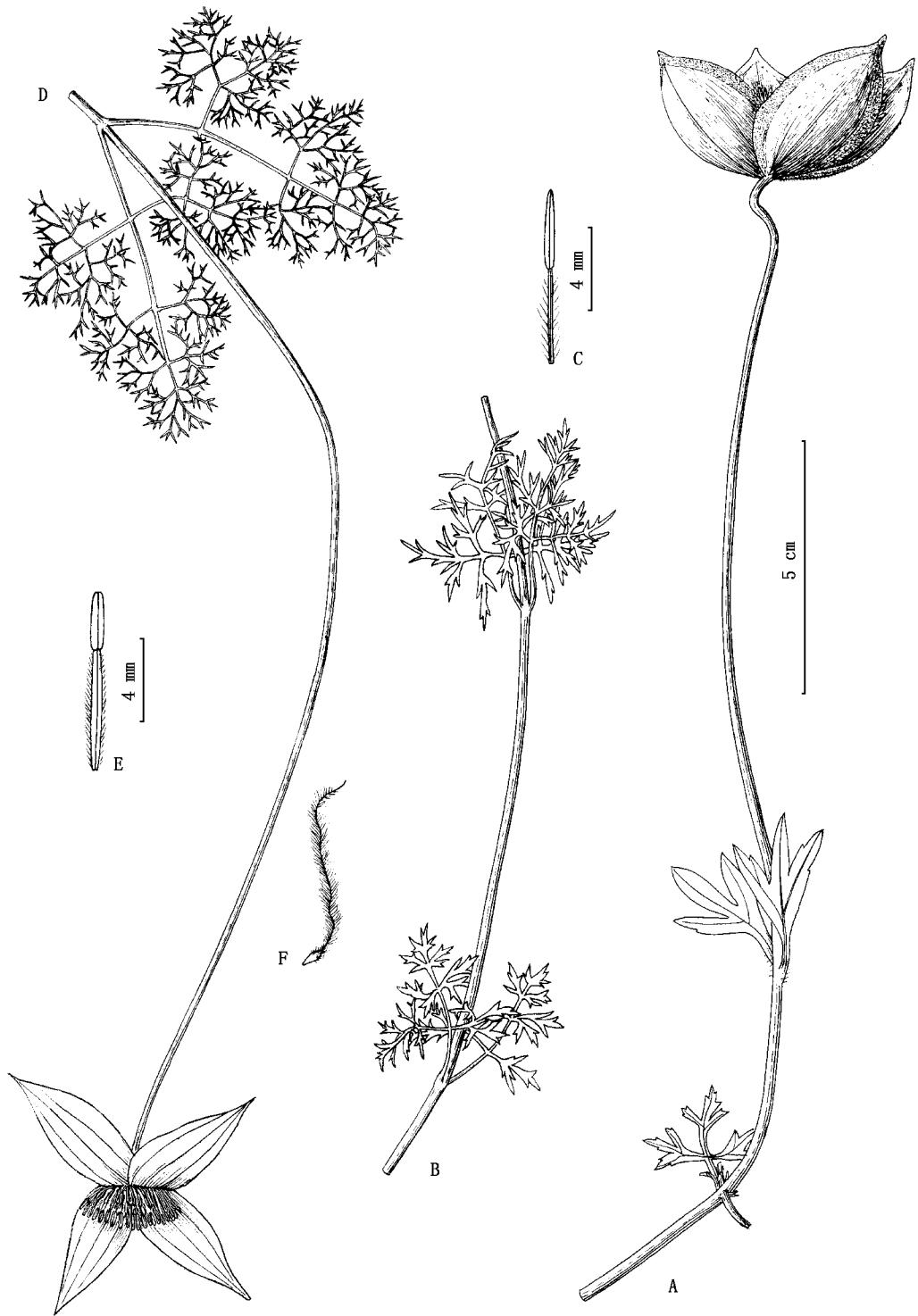


Fig. 5. A - C, *Clematis oligophylla* Hook. A, upper part of flowering stem; B, two pairs of leaves; C, stamen (from Perrier s. n.). D - F, *C. anethifolia* Hook. D, upper part of flowering stem; E, stamen; F, achene (from Philipson 1871).

Hildebrandt 3687 (G) ; Ankaratra Mts. , Kitching s. n. (K) ; Ankazobe , Perrier 4929 (P) ; Betafo , Viguier & Humbert 1553 (P) ; Manankasina , Cours 1773 (P) ; Mansahatombo , Capuron 46 (P) ; Mavidaza , Saboureau 1165 (P) ; Mt. Tsiafajavona , Perrier s. n. (BR) ; Tenonrivo , Catat 1684 (P) ; Vavavato , Decary 13847 (P) ; without precise localities , Baron 1766 , 1817 (K) , Soauierauua 2235 (GH).

6. *Clematis pimpinellifolia* Hook. , Icon. Pl. 1 : t. 77. 1837 ; Durand & Schinz , Consp. Fl. Afr. 1(2) : 5. 1898 ; Viguier & Perrier in Mém. Inst. Sci. Madag. , ser. B, 2(2) : 232. 1949 , p. p. excl. syn. *C. oligophylla* Hook. et *C. dissecta* Baker ; Perrier in Humbert , Fl. Madag. Comor. 76^e Fam. Renonculac. 24. 1950 , p. p. excl. syn. ; W. T. Wang in Acta Phytotax. Sin. 38 : 425. 2000. — *Clematopsis pimpinellifolia* Bojer ex Hook. , l. c. sub t. 77. — *Clematis villosa* DC. ssp. *pimpinellifolia* (Hook.) Kuntze in Verh. Bot. Ver. Brand. 26 : 173. 1888 , p. p. — *Clematopsis pimpinellifolia* (Hook.) Hutch. in Bull. Misc. Inform. Kew 1920 : 22. 1920. Type : Madagascar. Without precise locality , Lyall 108 (holotype , K !).

Clematis villosa DC. ssp. *oligophylla* var. *hildebrandtii* Kuntze in l. c. Type : Madagascar. Betsilev , 1881-01 , Hildebrandt 3877 (isotypes , K ! , P !).

C. pimpinellifolia fa. *Clematopsis* Perrier in Humbert , l. c. , 26 , fig. 10. 1950 , p. p.

C. bojeri auct. non Hook. : M. Johnson , Klematis 145. 1997 , p. p. quoad syn. *C. pimpinellifolia* Hook. ; Grey-Wils. , Clematis 198. 2000 , p. p. quoad syn. *C. pimpinellifolia* Hook.

Fig. 4 : G - I (see p. 395)

Small shrub. Stem many-branched ; branches 4 - 6-angulate , often indistinctly 6-sulcate , glabrescent ; hornotinous branches densely yellowish pubescent. Leaves 3 - 4-pinnatisect ; leaf blade coriaceous , triangular , 1.6 - 4 × 2.5 - 5.5 cm ; pinnae 2 - 3 pairs , shortly stalked , triangular-ovate ; ultimate lobes triangular , lanceolate-linear , or oblong , 2 - 6 mm broad , apex acute , margin entire or 1(- 2)-denticulate , adaxially sparsely appressed-sericeous , abaxially on veins pubescent , midribs abaxially prominent ; petioles 0.1 - 1.5 cm long. Cymes terminal , 1 - 3-flowered ; bracts obovate or narrowly obovate , 1.2 - 1.5 cm long , acute , entire , appressed-pubescent on both surfaces. Flower 3.5 - 4 cm in diam. ; pedicel 1 - 2 cm long , yellowish velutinous. Sepals 4 , broadly ovate , 1.8 - 2.2 × 1.2 - 1.6 cm , apex acute , inside appressed-puberulous , outside densely appressed-pubescent. Stamens 10 - 12 mm long ; filaments narrowly linear , below pubescent ; anthers narrowly oblong , ca. 2.5 mm long , apex obtuse. Ovaries densely pubescent ; styles 10 - 12 mm long , densely villous. Achenes compressed , narrowly obovate , ca. 4 × 1.6 mm , pubescent , narrowly rimmed ; persistent styles ca. 2.8 cm long , plumose. Fl. Dec. to Feb. of the next year.

Madagascar. In montane regions ; alt. 1500 - 2400 m.

Additional specimens examined.

Madagascar. Ankaratra , Decary 17582 (BR , P) ; Antsirabe , Perrier 4920 , 4926 (P) ; Emirena , Bojer s. n. (P) ; Mnkaratre , Capuron 46 (P) ; Mt. Tsiafajavona , Perrier 13424 (P) ; Talabsara , Decary 17512 (P) ; Tananarive , Decary 718 (P) ; without precise locality , Baron 690 , 2004 (K).

7. *Clematis anethifolia* Hook. , Icon. Pl. 1 : t. 78. 1837 ; Durand & Schinz , Consp. Fl. Afr. 1(2) : 1. 1898 ; Viguier & Perrier in Mém. Inst. Sci. Madag. , ser. B, 2(2) : 230. 1949 ; Perrier in Humbert , Fl. Madag. Comor. 76^e Fam. Renonculac. 22 , fig. 8. 1950. — *C. villosa* DC. ssp. *anethifolia* (Hook.) Kuntze in Verh. Bot. Ver. Brand. 26 : 174. 1885. — *Clematopsis anethifolia* (Hook.) Hutch. in Bull. Misc. Inform. Kew 1920 : 22 , pl. 1 , fig. 4. 1920. — *Clematopsis bojeri* (Hook.) Raynal var. *anethifolia* (Hook.) Raynal in Adansonia 18(1) : 12 ,

pl. 1, fig. 8. 1978. — *Clematis bojeri* Hook. var. *anethifolia* (Hook.) M. Johnson, Klematis 147. 1997; Brummitt in Kew Bull. 55(1):106. 2000; Grey-Wils., Clematis 199. 2000. Type: Madagascar. Without precise locality, Lyall s.n. (holotype, K!; isotype, BM!).

C. villosa ssp. *anethifolia* var. *brevifolia* Kuntze in l.c. — *C. anethifolia* Hook. var. *brevifolia* (Kuntze) Durand & Schinz, Conspl. Fl. Afr. 1(2):1. 1898. Type: Madagascar. Without precise locality, Baron 17 (holotype, K).

Fig. 5 : D – F (see p. 397)

Small subshrub. Stem ca. 40 cm tall, shallowly 12-sulcate, glabrous, simple, with 3–4 pairs of leaves. Leaves 3–4-pinnatisect; leaf blade triangular, ca. 5 cm long; pinnae 3–4 pairs, slenderly stalked; ultimate lobes narrowly linear or subfiliform, 2–16 × 0.2–0.3 mm, glabrous on both surfaces; petioles 1.3–2.4 cm long. Flower solitary, terminal, long pedicellate, pendulous. Sepals 4, white, narrowly ovate or oblong-ovate, 2.8–4.5 × 1–1.6 cm, apex attenuate or long acuminate, inside sparsely pubescent, outside glabrous, along margin densely appressed-pubescent. Stamens 10–13 mm long; filaments narrowly linear, pubescent; anthers linear, 2.2–3.2 mm long, apex obtuse. Ovaries densely pubescent; styles ca. 11 mm long, densely villous. Achenes compressed, narrowly ovate, ca. 4.5 × 2 mm, pubescent, narrowly rimmed; persistent styles ca. 3 cm long, plumose. Fl. Nov. to Apr. of the next year.

Madagascar. On dry grassy slopes; alt. 1000–2000 m.

Additional specimens examined.

Madagascar. Ambalavao, Humbert 3634 (P), Rajafindrakoto 2407 (BR), 3473 (P), Haine 228, Rakotovao 8500 (K); Amdringitra, Guillaumet 3751 (P); Ankaratra, Perrier 13424 (P); Antananarivo, Schatz et al. 3642 (P), Philipson 1871 (BR); Arivorarnano, Elliot 1926 (K); Autsahapandrau, Decary 17657 (P); Betsileo, Humbert 28073 (P), 28378 (BR); Emirena, Bojer s.n. (P); Itremo, Humbert 28378 (P); Manjakatombo, Decary 13353 (K, P), Benoit 453, Lourteig 1762, Deroin 227 (P); Hndungitra Mts., Perrier 1914, 4893 (P); Ounoron Kay, Rusillon 132 (G); Tananarivo, Croat 29001 (K), Goudot s.n. (G); without precise locality, Baron s.n. (K).

Ser. 2. **Villosae** (Prantl) W. T. Wang, st. nov. — Sect. *Pseudanemone* Prantl 2. *Villosae* ^① Prantl in Bot. Jahrb. 9:258. 1888, p.p. Lectotype: *C. villosa* DC.

Sepala subcoriacea vel papyracea, intus velutina vel densissime puberula. Antherae lineares, raro anguste oblongae, 2.5–4.5(–5) mm longae.

Sepals subcoriaceous or papery, inside velutinous or densely puberulous. Anthers linear, rarely narrowly oblong, 2.5–4.5(–5) mm long.

Three species, widespread on central and southern African mainland.

8. *Clematis villosa* DC., Syst. 1:154. 1818; et Prodr. 1:7. 1824; Kuntze in Verh. Bot. Ver. Brand. 26:172. 1885; Hiern, Cat. Afr. Pl. Welw. 1:2. 1896; De Wild., Fl. Bas Moyen Congo 1:243. 1906; M. Johnson, Klematis 158. 1997; Brummitt in Kew Bull. 55(1):103. 2000; Grey-Wils., Clematis 197. 2000. — *Clematopsis villosa* (DC.) Hutch. in Bull. Misc. Inform. Kew 1920:22. 1920, quoad comb. tantum, excl. specim. cit. et syn. *Clematis bojeri* Hook.; Raynal in Adansonia, ser. 2, 18(1):16, fig. 3. 1978; Cribb & Leedal, Mount. Flow. S. Tanzania 37. 1982. Type: Angola (Raynal, 1978; Brummitt, 2000), without field notes and collector unknown (holotype, P !).

① The subdivisions under section enumerated by Arabic figures in the classification of the *Clematis* proposed by Prantl (1888) were treated as subsections by Schneider (1906). In this aspect I follow Schneider in the present revision.

C. scabiosaeifolia DC. , Syst. 1 :154. 1818 ; et Prodr. 1 :7. 1824 ; Durand & Schinz , Conspl. Fl. Afr. 1 (2) :6. 1898 ; et Stud. Fl. Congo 56. 1896 ; Durand , Syll. Fl. Congol. 14. 1909. — *C. villosa* DC. ssp. *scabiosaeifolia* (DC.) Kuntze in l. c. 174. — *C. villosa* DC. var. *scabiosifolia* (DC.) Hiern , Cat. Afr. Pl. Welw. 1 :2. 1896. — *Clematopsis scabiosaeifolia* (DC.) Hutch. in l. c. 20 ; Exell & Mendonca in Carriso , Conspl. Fl. Angol. 1 (1) :5. 1937 ; Staner & Léonard in Robyns , Fl. Congo Belg. Ruanda-Urundi 2 :198 , pl. 16. 1951 ; Exell et al. in Bull. Soc. R. Bot. Belg. 83 :410. 1951 ; Milne-Redhead & Turrill in Turrill et al. , Fl. Trop. E. Afr. Ranunculac. 7. 1952 ; Keay , Fl. W. Trop. Afr. , ed. 2 , 1 (1) :64. 1954 ; Exell & Milne-Redhead in Exell & Wild , Fl. Zambes 1 (1) :93. 1960 ; Exell et al. in Fernand. & Mendes , Fl. Mocamb. 4. Ranunculac. 6. 1973 ; Brummitt in Kew Bull. 31 (1) :160. 1976 ; Troupin , Fl. Rwanda 1 :273. 1978. Type : Without field notes and collector unknown (holotype , P !).

Clematis mechowiana Kuntze in l. c. 171. 1885. Type : " Africa aequator. occid. " : Malange , Mechow & Teusz 410 (holotype , B ; isotype , G !).

C. villosa DC. ssp. *argentea* Kuntze in l. c. 174. 1885. — *C. argentea* (Kuntze) Prantl in Bot. Jahrb. 9 :258. 1888 ; Durand & Schinz , Conspl. Fl. Afr. 1 (2) :1. 1898 ; M. Johnson , Klematis 145. 1997. — *Clematopsis argentea* (Kuntze) Hutch. in l. c. 19. 1920. Type : Angola. Pungo Andongo , 1857-03 , Welwitsch 1220 (isotypes , BM ! , G ! , K ! , P !).

Clematis stuhlmannii Hieron. in Engler , Pflanzenw. Ost.-Afr. C :180. 1895 ; Engler , Wiss. Ergeb. Deutsch. Zentr.-Afr. Exped. 1907-09 2 :207. 1911 ; M. Johnson , Klematis 156. 1997. — *Clematopsis stuhlmannii* (Hieron.) Hutch. in l. c. 20. Type : Tanzania. Kagehi , Stuhlmann 3491 (syntype , not seen ; photo , GH ! , K ! , MO !).

Clematis villosa DC. var. *argentea* f. *acutiloba* Welw. ex Hiern , Cat. Afr. Pl. Welw. 1 :2. 1896. Type : unknown.

C. goetzei Engler in Bot. Jahrb. 28 :388. 1900 ; M. Johnson , Klematis 149. 1997. Type : Tanzania. Uhehe , alt. 1800 m , 1899-02 , Goetze 639 (syntype , not seen ; photo , GH !) , 636 (syntype , not seen).

C. sapinii De Wild. , Pl. Bequaert. 2 :30. 1923 ; M. Johnson , Klematis 153. 1997. — *Clematopsis sapinii* (De Wild.) Staner & Léonard in Bull. Soc. R. Bot. Belg. 82 :342. 1950 ; Exell et al. in l. c. 83 :421. 1951. Type : Zaire. Katola , 1908-04 , Sapin s. n. (holotype , BR ; photo , BM ! , BR !).

Clematopsis pulchra Weimarck in Bot. Notis. 1936 :27 , fig. 8. 1936. Type : Zimbabwe. Inyangwa , alt. 1700 m , 1930-12-15 , Weimarck 3711 (holotype , LD ! ; isotype , S !).

Clematopsis scabiosifolia (DC.) Hutch. Group E , F , G , Exell et al. in Bull. Soc. R. Bot. Belg. 83 :417. 1951.

This species consists of three subspecies widespread on central and southern African mainland.
8a. ssp. *villosa* Fig. 6 : A – D

Subshrub. Stem ca. 1 m tall , shallowly 10-sulcate , above branched , densely puberulous and pubescent , or velutinous. Leaves pinnate , (3 – 5 – 7)-foliolate , sometimes bipinnate ; leaflets papery or subcoriaceous , orbicular-ovate , ovate , narrowly ovate , obovate , or elliptic , 3 – 6 × 1 – 6 cm , apex acute or obtuse , base rounded , subcordate , or cuneate , margin usually sparsely dentate , undivided or sparsely lobulate , sometimes 2 – 3-lobed , adaxially densely appressed-pubescent , abaxially velutinous , basal veins nearly flat ; petioles 0.4 – 2.2 cm long , usually velutinous. Cymes terminal , 5 – 7 – 20 -flowered ; bracts foliaceous. Flowers slightly pendulous , 4 – 6 cm in diam. ; pedicel 1 – 12 cm long , velutinous. Sepals 4 , white , subcoriaceous or papery , broadly ovate ,



Fig. 6. *Clematis villosa* DC. A - D, ssp. *villosa*. A, upper part of flowering stem; B, cauline leaf; C, stamen; D, achene (from Thulin & Mhoro 3125) E, ssp. *oliveri* (Hutch.) Brummitt, upper part of flowering stem (from Young 1).

sometimes obovate, $2-3 \times 1-2$ cm, apex acute or shortly acuminate, sometimes rounded, inside densely puberulous or velutinous, outside densely appressed-pubescent, along margin velutinous. Stamens 1.3-1.5 cm long; filaments narrowly linear, below on margin pubescent; anthers linear or narrowly oblong, 2.5-4.5 mm long, apex obtuse. Ovaries pubescent; styles 9-11 mm long, densely villous. Achenes compressed, obovate, ca. 4×3 mm, pubescent; persistent styles ca. 5 cm long, plumose. Fl. Jan. - Oct.

Angola, Burundi, Cameroon, Central Africa, Mozambique, Rwanda, Tanzania, Uganda, Zaire, Zambia, and Zimbabwe. On slopes or in grassy places; alt. 1300-2100 m.

Additional specimens examined.

Angola. Huila, Borges 344 (K, P), Dekundt 99 (LE); Serre da Chella, Humbert 16283 (P).

Burundi. Karuzi, Ben 1821 (K).

Cameroon. Sugu Plateau, F. A. Williams s.n. (US).

Central Africa. Yalinga, Testu 2857 (P).

Mozambique. Massangulo, Sousa 1314 (P).

Rwanda. Kibungo, Bridson 309 (K).

Tanzania. Bukoba, Haarer 2252 (K); Iringa, Hedren et al. 78 (UPS); Kondoa, Ruffo 1308 (K); Lushoto: West Usumbura Mts., Borhidi et al. 85622 (UPS); Morogoro, Thulin & Mhoro 3125 (UPS); Mutara, Alcool 4128 (K); Nyara, Tanner 5508 (K); Ufipa, Richards 12102 (K); Wanga, Kisena 2605 (K).

Uganda. Ankole, Purseylon 682 (K); Kigezi, Sanford 1212 (K); Kanungu, Lind 44 (K); without precise locality, Thomas 4181 (S).

Zaire. Gabico, Kalrun 9519a (K).

Zambia. Kalanda Dambo, Milne-Redhead 4562 (K).

Zimbabwe. Marandellas, Dehn 83 (K); Matopro, E. H. Wilson s. n. (GH); Salisbury, Leach 8200 (P).

8b. ssp. *kirkii* (Oliv.) Brummitt in Kew Bull. 55 (1): 104. 2000; Grey-Wils., Clematis 197. 2000. — *C. kirkii* Oliv., Fl. Trop. Afr. 1: 5. 1868; Durand & Schinz, Consp. Fl. Afr. 1 (2): 4. 1898; De Wild., Fl. Bas Moyen Congo 1: 243. 1906; Durand, Syll. Fl. Congol. 14. 1909; M. Johnson, Klematis 151. 1997. — *C. villosa* ssp. *normalis* Kuntze var. *kirkii* (Oliv.) Kuntze in Verh. Bot. Ver. Brand. 26: 173. 1885. — *Clematopsis kirkii* (Oliv.) Hutch. in Bull. Misc. Inform. Kew 1920: 17. 1920; Weimarck in Bot. Notis. 1936: 26. 1936; Staner & Léonard in Bull. Soc. R. Bot. Belg. 82: 340. 1950. — *Clematopsis scabiosifolia* ssp. *kirkii* (Oliv.) Brummitt in Kew Bull. 31 (1): 160. 1976. — *Clematopsis villosa* ssp. *kirkii* (Oliv.) Raynal & Brummitt in Adansonia, ser. 2, 18 (1): 16. 1978; Cribb & Leedal, Mount. Flow. S. Tanzania 37. 1982. Type: Malawi. Manganya Hills, Kirk s.n. (holotype, K!).

Clematis villosa DC. var. *pubescens* Kuntze in Verh. Bot. Ver. Brand. 26: 174. 1885. — *C. stanleyi* Hook. var. *pubescens* (Kuntze) Durand & Schinz, Consp. Fl. Afr. 1 (2): 7. 1898. Type: Lake Nyassa, 1876, Simons K34 (holotype, BM).

C. busseana Engler in Bot. Jahrb. 45: 269. 1910. Type: Tanzania. Without precise locality, Busse 295 (syntype, not seen; photo, GH!, K!, MO!). Malawi. Nyassaland, Stolz 146 (syntypes, GH!, US!).

C. lugnignu De Wild. in Repert. Sp. Nov. 13: 200. 1914; M. Johnson, Klematis 152. 1997. Type: Zaire. Katanga: Ellisabethville, 1912-02, Homble 127 (holotype, BR; photo, GH!, K!).

Clematopsis costata Weimarck in Bot. Notis. 1936 : 28, fig. 9. 1936. Type : Zimbabwe. Inyangwa, alt. 2000 m, 1930-12-06, Fries, Norlindh & Weimarck 34826 (holotype, LD!; isotype, S!).

Clematopsis scabiosifolia (DC.) Hutch. Group C, Exell et al. in Bull. Soc. R. Bot. Belg. 83 : 416. 1951; Milne-Redhead & Turrill in Turrill et al., Fl. Trop. E. Afr. Ranunculac. 7. 1952; Exell & Milne-Redhead in Exell & Wild, Fl. Zambes. 1(1) : 93. 1960.

This subspecies differs from ssp. *villosa* in its leaflets abaxially densely or sparsely pubescent, not velutinous.

Leaves 3-7-foliolate; leaflets narrowly obovate, obovate, long elliptic, or cuneate, occasionally broadly ovate, 2-9(-10) x 1-4(-6) cm. Cymes 3-many-flowered. Sepals thickly papyry. Fl. Jan.-May.

Cameroon, Congo, Burundi, Malawi, Mozambique, Nigeria, Tanzania, Zaire, Zambia, and Zimbabwe. On grassy slopes or in bushes; alt. 1000-1900 m.

Additional specimens examined.

Cameroon. Mambila Plateau, Hepper 1822 (P); Mbanti, Ledermann 2302 (UPS).

Congo. Sekanja, Kassner 2288 (P).

Burundi. Bubanza, Reekmans 5527 (P).

Malawi. Mlanje, Chapman s.n. (K); Blantyre, Brummitt 8775, 9012, Faulkner 213 (K); Muera Hills, Fosta 2 (K); Mzimba, Pawek 8044 (P); Nyassaland, Buthanan 638 (G, GH), 763 (LE, US); Rukuru, Evans & Erens 694 (K).

Nigeria. Bauchi Plateau, Lely 128 (P); Ropp Plateau, Keay & King 37102 (P).

Tanzania. Iramba Plateau, Hammond 157 (K); Iringa, Lynes 197, Greenway 4045 (K); Kibuko, Semsei 1984 (K); Lushoto: Usambara Mts., Borhidi et al. 85592 (UPS); Mbeya, Harwood 16 (K); Morogoro, Schlieben 2991 (G); Ruhudje, Schlieben 64 (G); Rungwe, Richards 9823 (K), Leliyo 433 (UPS); Songea, Milne-Redhead & Taylor 9304A (K).

Zaire. Elisabethville, Horschberg 226 (K).

Zambia. Abercorn, Burtt 6379, Richards 13777, 17083 (K); Fwambo, Carson 46 (K); Katete, Wright 133 (K); Mbalala, Sanane 434 (K); Mporokoso, Brummitt 17110 (K); Lusaka, Brummitt & Lewis 14341 (K).

Zimbabwe. Inyangwa, Chase 7926 (K), Fries, Norlindh & Weimarck 3482 (S); Miami, Wild 1690 (K); Salisbury, Craster 173 (K); Trelawney, Jack 88 (K).

8c. ssp. *oliveri* (Hutch.) Brummitt in Kew Bull. 55 (1) : 104. 2000; Grey-Wils., Clematis 197. 2000. — *Clematopsis oliveri* Hutch. in Bull. Misc. Inform. Kew. 1920 : 20. 1920; Hutch. & Dalziel, Fl. W. Trop. Afr. 1 : 67. 1927; Staner & Léonard in Bull. Soc. R. Bot. Belg. 82 : 340. 1950; Milne-Redhead & Turrill in Turrill et al., Fl. Trop. E. Afr. Ranunculac. 7. 1952. — *Clematopsis scabiosifolia* (DC.) Hutch. ssp. *oliveri* (Hutch.) Raynal & Brummitt in Adansonia, ser. 2, 18 (1) : 18. 1978. — *Clematis oliveri* (Hutch.) M. Johnson, Klematis 152. 1997. Type: Sudan. White Nile, Petherick s.n. (lectotype, K! — Milne-Redhead & Turrill, 1952). Uganda: Between Mumias and Lubwas, 1898-11, Whyte s.n. (syntype, K!). British East Africa: Nyanza basin, 1913-07-29, Battiscombe 681 (syntype, K!).

Clematis chrysocarpa Welw. ex Oliv., Fl. Trop. Afr. 1 : 5. 1868, p. p. quoad specim. Petherick s.n.

C. villosa DC. ssp. *chrysocarpa* var. *stipulata* Kuntze in Verh. Bot. Ver. Brand. 26 : 174. 1885, p. p. quoad specim. Petherick s.n.

Clematopsis nigerica Hutch. in Bull. Misc. Inform. Kew 1927 : 154. 1927; et Fl. W. Trop.

Afr. 1:6, fig. 16. 1927. Type: Nigeria. Bauchi Plateau, 1922, Young 1 (holotype, K!).

Clematopsis scabiosifolia (DC.) Hutch. Group D, Exell et al. in Bull. Soc. R. Bot. Belg. 83:416. 1951; Milne-Redhead & Turrill, Fl. Trop. E. Afr. Ranunculac. 7. 1952.

Fig. 6:E (see p. 401)

This subspecies differs from ssp. *villosa* in its pubescent leaflets and in its usually solitary, terminal flowers.

Stem 50–90 cm tall. Leaves pinnate, 3–5-foliate, lowermost and uppermost leaves small, often simple, 3-lobed; leaflets obovate-oblong, narrowly oblong, or elliptic, 2–6.5×0.6–3 cm. Flower 3–6.4 cm in diam. Fl. Jan.–Dec.

Burundi, Cameroon, Kenya, Nigeria, Rwanda, Sudan, Tanzania, Uganda, ?Zaire, and Zimbabwe. In grassy places or on slopes; alt. 850–1900 m.

Additional specimens examined.

Burundi. Gakere, Lewalle 159 (K); Kitaga, Ben 1627 (K).

Cameroon. Adamava, Hepper 2738 (K); Bamenda, Lightbody s.n., Hepper 2714 (K).

Kenya. Kitale, Bogdan 3659, Jex-Blake 5707 (K); Migori, Gilbert 5983 (K); Turkana, Thorold 3211 (K).

Nigeria. Bauchi Plateau, Lely 128 (K); Gembu, Daranola 62861 (K); Mabila, Wit et al. 66744 (K); Mumuye, Chapman 4292 (K); Sardauna, Bowden 56 (K).

Sudan. Equatoria Prov., Andrews 1023, Myers 8402 (K); Lado, Sillitoe 437 (K); Loka, Johnston 1, Sandison 24 (K).

Tanzania. Bukoba, Haarer 2251 (K); Iringa, Lovett et al. 1899 (K); Itala Hills, Richards 20591 (K); Kibondo, Eggeling 6223 (K); Kigoma, Richards 11697 (K); Mumwendo, Tanner 5035 (K); Ngara, Tanner 5566 (K); Utahya, Newbould & Jefford 1293 (K).

Zimbabwe. Inyanga, Norlindh & Weimarck 4657 (S).

9. Clematis africolineariloba W. T. Wang in Acta Phytotax. Sin. 39: 336. 2001. —

Clematopsis lineariloba Hutch. & Summ. in Bull. Misc. Inform. Kew 1925: 361. 1925. —

Clematopsis oliveri Hutch. f. *lineariloba* (Hutch. & Summ.) Staner & Léonard in Bull. Soc. R. Bot. Belg. 82: 342. 1950. — *Clematis lineariloba* (Hutch. & Summ.) W. T. Wang in Acta Phytotax. Sin. 38: 428, fig. 4:4–6. 2000, non DC., 1818. Type: Tanzania. Kyimbila Distr.: Usafwa, 1913-12, Stoltz 2385 (holotype, K!; isotypes, BR!, GH!, P!).

Clematis oliveri (Hutch.) M. Johnson, Klematis 149. 1997, p. p. quoad syn. *Clematopsis lineariloba* Hutch. & Summ.

C. chrysocarpa Welw. ex Oliv. ssp. *bijuga* Brummitt in Kew Bull. 55(1):102. 2000, p. p. quoad syn. *Clematopsis lineariloba* Hutch. & Summ.

Fig. 7:D–F

Small subshrub. Stem ca. 75 cm tall, near base 2.5 mm in diam., 8-sulcate, sparsely puberulous, simple, with ca. 5 pairs of leaves. Leaves 1–2-pinnatisect; leaf blade subcoriaceous, ovate, 8–15×4–6 cm; pinnae ca. 3 pairs, lowermost ones often unequally 2-sect or 2-parted, upper ones undivided, ultimate lobes linear or narrowly lanceolate-linear, 2–10×0.2–0.5 cm, adaxially glabrous, abaxially on prominent midribs and lateral veins pilose; petioles 1.5–3.6 cm long, sparsely pubescent. Flower singular, terminal, 3–4 cm in diam., pendulous. Sepals 4, subcoriaceous, ovate or oblong, 1.6–2.1×0.6–1.2 cm, apex slightly acute, inside densely puberulous, outside sparsely puberulous, along margin velutinous. Stamens 10–12 mm long; filaments narrowly linear, below the middle on margin pubescent; anthers linear, 3.5–4 mm long, glabrous, apex obtuse. Ovaries densely pubescent; styles ca. 9 mm long, densely villous. Fl. Dec.

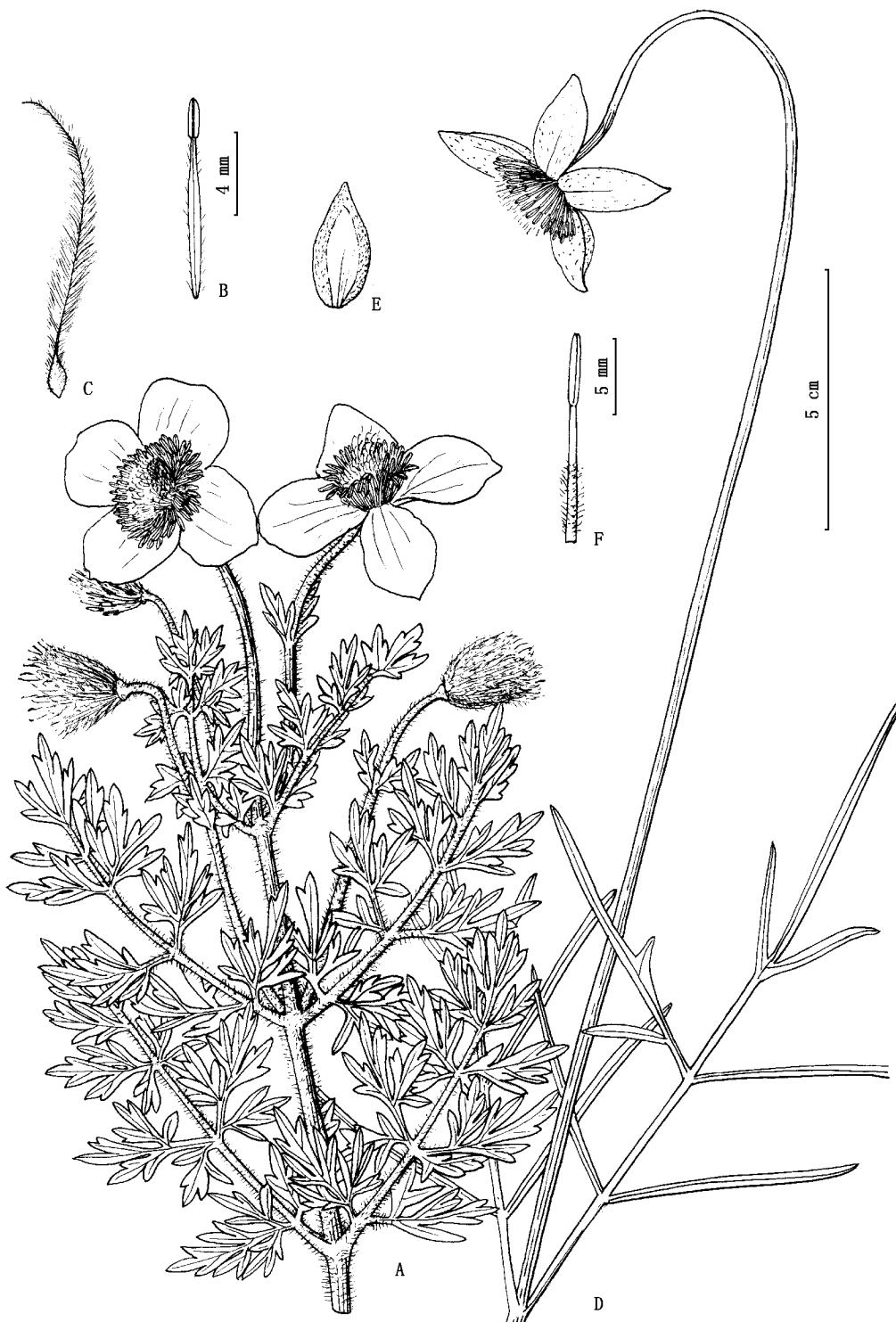


Fig. 7. A - C, *Clematis stanleyi* Hook. A, upper part of the flowering stem; B, stamen (from Bayliss 3145); C, achene (from Thorncroft 3091). D - F, *C. africolineariloba* W. T. Wang. D, upper part of the flowering stem; E, sepal outside; F, stamen (from Stoltz 2385).

Tanzania (Kyimbila : Usafwa). In forests ; alt. 1800 m.

10. *Clematis stanleyi* Hook. , Icon. Pl. 6 : t. 589. 1843 ; Harv. in Harv. & Sond. , Fl. Cap. 2. 1859 ; Oliv. , Fl. Trop. Afr. 1 : 6. 1868 ; Hook. f. in Curtis , Bot. Mag. 117 : t. 7166. 1891 ; Durand & Schinz , Consp. Fl. Afr. 1(2) : 6. 1898 ; Marloth , Fl. S. Afr. 221. 1913 ; M. Johnson , Klematis 155. 1997. — *C. villosa* DC. ssp. *stanleyi* (Hook.) Kuntze in Verh. Bot. Ver. Brand. 26 : 174. 1885 ; Brummitt in Kew Bull. 55 : 105. 2000 ; Grey-Wils. , Clematis 198. 2000. — *C. villosa* ssp. *stanleyi* var. *tomentosa* Kuntze in l. c. — *C. stanleyi* var. *tomentosa* (Kuntze) Durand & Schinz , Consp. Fl. Afr. 1(2) : 6. 1898. — *Clematopsis stanleyi* (Hook.) Hutch. in Bull. Misc. Inform. Kew 1920 : 21. 1920 ; Burtt Davy , Man. Flow. Pl. Ferns Transv. 1 : 10. 1926. — *Clematopsis scabiosifolia* (DC.) Hutch. ssp. *stanleyi* (Hook.) Brummitt in Kew Bull. 31(1) : 160. 1976. — *Clematopsis villosa* (DC.) Hutch. ssp. *stanleyi* (Hook.) Raynal & Brummitt in Adansonia , ser. 2 , 18 (1) : 16. 1978. Type : South Africa. Transvaal : Macalisberg , Burke 157 (holotype , K !).

Clematis villosa ssp. *stanleyi* var. *hirsuta* Kuntze in l. c. , p. p. excl. Baron 2004. — *C. stanleyi* var. *hirsuta* (Kuntze) Durand & Schinz , Consp. Fl. Afr. 1(2) : 6. 1898. Type : South Africa. Goldfield , 1870 , Baines 25 (syntype , K).

? *C. villosa* ssp. *stanleyi* var. *pubescens* Kuntze in l. c. Type : Nyassa , Simons s. n. (holotype , BM).

? *C. villosa* ssp. *schinziana* Kuntze in Bull. Herb. Boiss. 11 : 182. 1894. Type : Botswana. Kalachari , Schinz s. n. (holotype , not seen).

Clematopsis scabiosifolia (DC.) Hutch. Group A , Exell et al. in Bull. Soc. R. Bot. Belg. 83 : 414. 1951 ; Exell & Milne-Redhead in Exell & Wild , Fl. Zambes. 1(1) : 92. 1960.

Clematopsis scabiosifolia auct. non (DC.) Hutch. : Exell & Mendonca , Consp. Fl. Angol. 1 : 5. 1937 , p. p. quoad syn. *Clematis stanleyi* Hook. ; Letty , Wild Flow. Transv. 140. 1962 ; Merxmüller , Prodr. Fl. Sudwestafr. Fam. 37 : 3. 1968 , p. p. quoad syn. *Clematopsis stanleyi* (Hook.) Hutch.

Fig. 7 : A – C

Subshrub. Stem ca. 1 m tall , simple or above branched , densely puberulous and pubescent. Leaves 3-pinnatisect ; leaf blade coriaceous or papery , narrowly ovate , $5 - 12 \times 4 - 10$ cm ; pinnae 3 – 4 pairs , ultimate lobes narrowly triangular , triangular , or linear , $2 - 14(-25) \times 1 - 3(-6)$ mm , apex pungent , usually entire , on both surfaces usually more or less densely appressed-pubescent , sometimes adaxially nearly glabrous ; petioles 0.3 – 2 cm long. Cymes terminal , (1 –) 3 – 5-flowered ; bracts foliaceous. Flowers nodding , 3.5 – 5 cm in diam. ; pedicel 2 – 4.5 cm long , velutinous or densely pubescent. Sepals 4 , pinkish , papery , obovate , broadly ovate , or ovate , $1.8 - 2.2(-3) \times 1.1 - 1.8(-2.4)$ cm , apex rounded or acuminate , entire or sparsely crenulate , on both surfaces densely puberulous , outside on central part sometimes velutinous. Stamens 12 – 16 mm long ; filaments narrowly linear , near middle on margin pubescent ; anthers narrowly oblong or linear , 2.5 – 5 mm long , apex minutely apiculate or obtuse. Ovaries pubescent ; styles 10 – 12 mm long , densely villous. Achenes compressed , ovate , $4.5 - 5.5 \times 2 - 3.5$ mm , pubescent ; persistent styles 3.5 – 4 cm long , plumose. Fl. Jan. – Mar.

Angola , Botswana , N South Africa , Zambia , and Zimbabwe. In grassy places or in thickets ; alt. 880 – 1500 m.

Additional specimens examined.

Angola. Without precise locality , Welwitsch 1221 (G).

Botswana. Chobe , Blomberg et al. 427 (UPS).

South Africa. Pretoria : Magaliesberge, Schlieben 7750 (G); Rutondal, Mogy 16457 (K); Waterberg, Lunché s.n. (P). Transvaal : Alma, Bayliss 2002 (G, GH); Carletonville, Wyk 106 (K); Doekerhoek, Schlechter 4133 (G, K, LE, P); Grootfontein, Story 6447 (UPS); Johannesburg, Roux 35816 (PRE); Kransberg, Werdermann 1663 (K); Kuduspoort, Rehman 4661 (K); Kwegersdorp, Meeuse 9055 (K); Lichtensberg, Scheepers 1486 (K); Sandfontein, Schlechter 4784 (G, K); Springbokolakta, Nelson 275 (K); Zeerust, Hutchinson 2962 (K); Jenkins (PRE); without precise locality, Kassner 1324 (P), Liebenberg 8815 (K).

Zimbabwe. Chamabonda, Mshasha 162 (K); Fort Victoria, Rdemeyer 9643 (K); Lashumo Valley, Holub s.n. (K); Matabeleland, Cecil 119 (K); Matetsi Safari Area, Gonde 386 (UPS); Okavango, Winter & Marais 4814 (K).

Ser. 3. ***Chrysocarpeae*** W. T. Wang, ser. nov. Type : *C. chrysocarpa* Welw. ex Oliv.

?Sect. *Pseudanemone* Prantl 1. *Spathulifoliae* Prantl in Bot. Jahrb. 9 : 258 : 1888, p. p. excl. *C. welwitschii* Hiern et *C. commutata* Kuntze.

Sepala subcoriacea vel papyracea, intus puberula vel velutina, raro glabra. Antherae semper lineares, usque ad 5.8 – 9.5 mm longae.

Sepals subcoriaceous or papery, inside puberulous or velutinous, rarely glabrous. Anthers always linear, up to 5.8 – 9.5 mm long.

Six species, occurring on southern African mainland.

11. *Clematis intraglabra* W. T. Wang in Acta Phytotax. Sin. 39 : 332, fig. 7. 2001. Type : Angola. Chitembo, alt. 1500 m, 1966-10-31, Brito Teixeira et al. 10897 (holotype, BR!).

Fig. 8

Perennial herb (?). Stem erect, ca. 45 cm tall, simple, shallowly 10-sulcate, near base glabrous, elsewhere sparsely villous, with 3 pairs of opposite leaves and 1 whorl of 3 uppermost leaves. Leaves simple : the opposite ones sessile or shortly petiolate, with petioles up to 4 mm long, subcoriaceous, long elliptic or oblong-spathulate, 3.6 – 8.5 × 1 – 2.8 cm, apex apiculate, base cuneate, margin above denticulate, undivided, adaxially sparsely villous or glabrescent, abaxially on veins sparsely villous, on both surfaces reticulate; the uppermost verticillate leaves subsessile or petiolate (with petioles up to 1.6 cm long), broadly rhombic or rhombic-ovate, 9 × 6 – 6.5 cm, base broadly cuneate, 3-parted, lobes narrowly oblong or long elliptic, margin above denticulate. Flower solitary, terminal, ca. 6 cm in diam.; pedicel ca. 11 cm long, villous. Sepals 4, white, papery, ovate or broadly ovate, 3 – 3.3 × 2.2 – 2.4 cm, apex shortly acuminate, inside glabrous, outside sparsely appressed-villous, along margin velutinous. Stamens 11 – 14 mm long; filaments linear, on margin pubescent; anthers linear, 6 – 7 mm long, apex obtuse. Ovaries pubescent; styles ca. 14 mm long, densely villous. Fl. Oct. – Nov.

Angola (Chitembo). Alt. 1500 m.

12. *Clematis uhehensis* Engler in Bot. Jahrb. 28 : 387. 1900; M. Johnson, Klematis 157. 1997; Brummitt in Kew Bull. 55 (1) : 105. 2000, p. p. excl. syn. *C. villosa* ssp. *normalis* var. *teuszii* Kuntze, *Clematopsis katangensis* Hutch., et *Clematopsis grandifolia* Staner & Léonard; Grey-Wils., *Clematis* 196, fig. 154. 2000. — *Clematopsis uhehensis* (Engler) Staner & Léonard in Bull. Soc. R. Bot. Belg. 82 : 342. 1950; Exell et al. in l.c. 83 : 427. 1951; Milne-Redhead & Turrill in Turrill et al., Fl. Trop. E. Afr. Ranunculac. 7. 1952; Exell & Milne-Redhead in Exell & Wild, Fl. Zambes. 1 : 92. 1960; Exell et al. in Fernand. & Mendes, Fl. Mo-camb. 4. Ranunculac. 8. 1973. — *Clematopsis scabiosifolia* (DC.) Hutch. ssp. *uhehensis* (Engler) Brummitt in Kew Bull. 31 (1) : 161. 1976. — *Clematopsis villosa* (DC.) Hutch. ssp. *uhehensis* (Engler) Raynal & Brummitt in Adansonia, ser. 2, 18 (1) : 18. 1978. Type :



Fig. 8. *Clematis intraglabra* W. T. Wang. A, habit; B, two stamens (from Brito Teixeira et al. 10897).

Tanzania. Uhehe, alt. 2000 m, 1899-02-04, Goetze 579 (holotype, B; photo, G!, GH!).

Clematis homblei De Wild. in Repert. Sp. Nov. 13: 200. 1914; M. Johnson, Klematis 150. 1997; Grey-Wils., Clematis 199. 2000. — *Clematopsis homblei* (De Wild.) Staner & Léonard in Robyns, Fl. Congo Belg. Ruanda-Urundi 2: 196. 1951; Exell et al. in Bull. Soc. R. Bot. Belg. 83: 420. 1951. Type: Zaire. Katanga: Katentania, 1912-11, Homble 828 (holotype, BR; isotypes, BM!, G!; photo, BR!, GH!, K!).

Clematopsis simplicifolia Hutch. in Bull. Misc. Inform. Kew 1925: 361. 1925. Type: Tanzania. Rungwe Stock, alt. 2800 m, 1914-02-04, Stoltz 2514 (holotype, K!; isotypes, GH!, P!, UPS!).

Fig. 9: A, B

Small subshrub. Stem 35–75 cm tall, near the woody base 2.5–4 mm in diam., shallowly 6–8-sulcate, simple, pubescent. Leaves simple, all opposite, sessile or shortly petiolate, with petioles up to 1 cm long; leaf blade subcoriaceous or papery, ovate, ovate-elliptic, or long elliptic, 3–7(–9) × 1.4–4(–5) cm, apex acute, base rounded or cuneate, margin dentate, undivided, or sometimes 3-lobulate, adaxially appressed-pubescent, abaxially only on veins pilose, more or less reticulate. Flower solitary, terminal, pendulous, 6–12 cm in diam.; pedicel 1.5–9.5 cm long, densely pubescent or velutinous. Sepals 4, white, sometimes tinged with pinkish outside, papery, ovate-oblong or oblong, 3–6 × 1.5–3 cm, apex acuminate or attenuate, inside velutinous or densely puberulous, outside densely appressed-pubescent, along margin velutinous. Stamens 12–15 mm long; filaments narrowly linear, near the middle on margin puberulous; anthers linear or narrowly oblong, 4–5.8 mm long, apex obtuse or minutely apiculate. Ovaries pubescent; styles ca. 15 mm long, densely villous. Achenes compressed, narrowly obovate, 3.8–4.5 × 2.2 mm, pubescent; persistent styles 3–4.5 cm long, plumose. Fl. Nov. to Mar. of the next year.

Malawi, Mozambique, Tanzania, and Zaire. In bushes or grassy places; alt. 1950–2800 m.

Additional specimens examined.

Malawi. Rumpi Distr.: Nyika Plateau, Brummitt 10930 (K, UPS).

Tanzania. Kitulo Plateau, Fuller 57, 59, Brummitt et al. 18141 (K); Mbeya, Milne-Redhead & Taylor 10310, Richards 14107, 19743 (K), Hedren et al. 175 (UPS); Mbizi Forest, Whellan 1329 (K); Rungwe, Cribb et al. 11273, 11303 (K); Ufipa, Richards 15834 (K).

13. *Clematis grandifolia* (Staner & Léonard) M. Johnson, Klematis 150. 1997; Grey-Wils., Clematis 196. 2000. — *Clematopsis grandifolia* Staner & Léonard in Bull. Soc. R. Bot. Belg. 82: 339, fig. 4. 1950; et in Robyns, Fl. Congo Belg. Ruanda-Urundi 2: 197. 1951; Exell et al. in Bull. Soc. R. Bot. Belg. 83: 424. 1951. Type: Zaire. Haut-Katanga: Elisabethville, Quarré 5054 (holotype, BR; photo, GH!, K!); 623 km from Belgian Boundary in C. S. K., 1920-01, Shantz 554 (paratypes, K!, US!).

Clematis uhehensis auct. non Engler: Brummitt in Kew Bull. 55: 105. 2000, p. p. quoad syn. *Clematopsis grandifolia* Staner & Léonard et *Clematis grandifolia* (Staner & Léonard) M. Johnson.

Fig. 9: C, D

Small subshrub. Stem ca. 70 cm tall, near the woody base ca. 8 mm in diam., shallowly 10-sulcate, appressed-puberulous, below glabrescent, simple or few-branched. Leaves simple, all opposite, subsessile, with petioles 1–5 mm long; leaf blade papery, narrowly ovate or elliptic, 9–16 × 4.5–9 cm, apex acute, base rounded, margin below entire, elsewhere dentate, adaxially sparsely strigose, abaxially only on veins appressed-puberulous, glabrescent, more or less

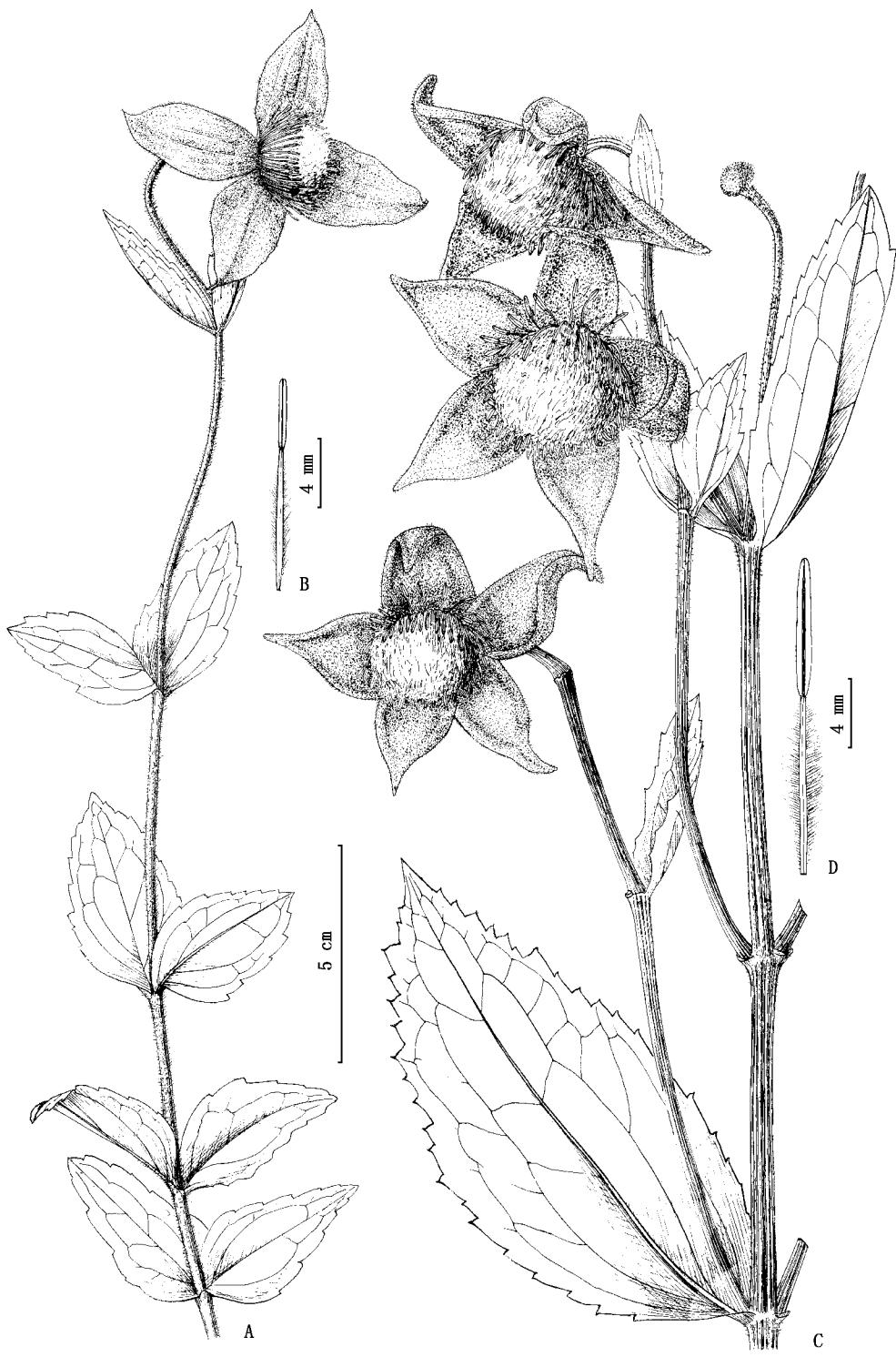


Fig. 9. A, B, *Clematis uhehensis* Engler. A, upper part of flowering stem; B, stamen (from Stoltz 2514). C, D, *C. grandifolia* (Staner & Léonard) M. Johnson. C, terminal inflorescence; D, stamen (from Shantz 554).

reticulate. Cymes terminal, 5–7-flowered; bracts foliaceous. Flower pendulous, 5–9 cm in diam.; pedicel 2.5–5 cm long, densely puberulous or velutinous. Sepals 4–5, white, thickly papery, narrowly ovate or elliptic, 2.5–4.8 × 1.8–2 cm, apex long acuminate or acuminate, on both surfaces very densely appressed-puberulous. Stamens 14–19 mm long; filaments narrowly linear, densely pubescent; anthers linear, 4–8 mm long, apex obtuse. Ovaries puberulous; styles 10–15 mm long, densely villous. Fl. Jan.

Zaire (Katanga).

14. *Clematis teuszii* (Kuntze) Engler, Pflanzenw. Afr. III, 1:170. 1915; M. Johnson, Klematis 157. 1997; Grey-Wils., Clematis 196. 2000. — *C. villosa* DC. ssp. *spathulifolia* Kuntze var. *teuszii* Kuntze cum f. *verticillata* Kuntze in Verh. Bot. Ver. Brand. 26:174. 1885. — *C. spathulifolia* (Kuntze) Prantl var. *teuszii* (Kuntze) Durand & Schinz, Consp. Fl. Afr. 1(2):6. 1898. — *Clematopsis teuszii* (Kuntze) Hutch. in Bull. Misc. Inform. Kew 1920:17, ut "teuczii." 1920; Exell & Mendonca in Carriso, Consp. Fl. Angol. 1:4. 1937; Exell et al. in Bull. Soc. R. Bot. Belg. 83:423, fig. 3. 1951. Type: Angola. Malange, 1879-11, Mechow & Teusz 305 (holotype, B; isotypes, two sheets, G!).

Fig. 10

Small subshrub. Stem ca. 50 cm tall, simple, ca. 10-sulcate, with pedicels densely villous (hairs 2–4 mm long), glabrescent. Leaves simple, opposite or upper or uppermost 3–4 leaves verticillate, subsessile or shortly petiolate, with petioles 0.4–1.4 cm long; leaf blade papery, obovate-elliptic, obovate-oblong, or broadly elliptic, 6.5–10 × 2–6 cm, apex acute, base cuneate or broadly cuneate, margin above the middle or near apex denticulate or dentate, undivided or 1-lobulate per side, on both surfaces appressed-pubescent, basal veins abaxially nearly flat or prominent. Flower solitary, terminal, 6–10 cm in diam.; pedicel 9–20 cm long. Sepals 4, white, papery, ovate or orbicular-ovate, 4–5 × 2–4 cm, apex acute or rounded, undivided, occasionally 2-lobed, inside above sparsely puberulous, outside appressed-pubescent, along margin velutinous. Stamens 8–18 mm long; filaments linear, pubescent; anthers linear, 5.5–7 mm long, apex obtuse, occasionally apiculate. Ovaries densely pubescent; styles ca. 12 mm long, densely villous. Achenes compressed, narrowly obovate-oblong or narrowly oblong, 10 × 2–3 mm, densely long sericeous, narrowly rimmed; persistent styles 4–5 cm long, plumose. Fl. Oct.–Nov.

Angola. In dry bushes or by river; alt. 1200–1700 m.

Additional specimens examined.

Angola. Benguela: Cuima, Exell & Mendonca 1940 (BM); Benguela: Nova Lisboa, Exell & Mendonca 1671a (BM); Bihe: Bie, Gossweiler s. n. (BM); from Bungo to Gage, Gossweiler 10460 (BM); Catombe, Gossweiler 1469 (BM).

15. *Clematis chrysocarpa* Welw. ex Oliv., Fl. Trop. Afr. 1:5. 1868, p. p. quoad specim. Welw.; et in Trans. Linn. Soc. 29:25, t. 1. 1875; Durand & Schinz, Consp. Fl. Afr. 1(2):2. 1898; M. Johnson, Klematis 149. 1997; Brummitt in Kew Bull. 55:102. 2000; Grey-Wils., Clematis 198. 2000. — *C. villosa* DC. ssp. *chrysocarpa* (Welw. ex Oliv.) Kuntze in Verh. Bot. Ver. Brand. 26:174. 1885. — *Clematopsis chrysocarpa* (Welw. ex Oliv.) Hutch. in Bull. Misc. Inform. Kew 1920:18. 1920; Exell in J. Bot. 64, Suppl. Polypet. 1. 1926 et 70, Suppl. Polypet. 205. 1932; Exell & Mendonca in Carriso, Consp. Fl. Angol. 1:5. 1937; Exell et al. in Bull. Soc. R. Bot. Belg. 83:420. 1951; Brummitt in Kew Bull. 31(1):161. 1976. Type: Angola. Huilla, Welwitsch 1222 (syntypes, K!, BM!).

? *Clematis villosa* ssp. *chrysocarpa* var. *poggei* Kuntze in l. c. — *C. chrysocarpa* var. *poggei* (Kuntze) Durand & Schinz, l. c. Type: Massumbo, Pogge s. n. (holotype, B).

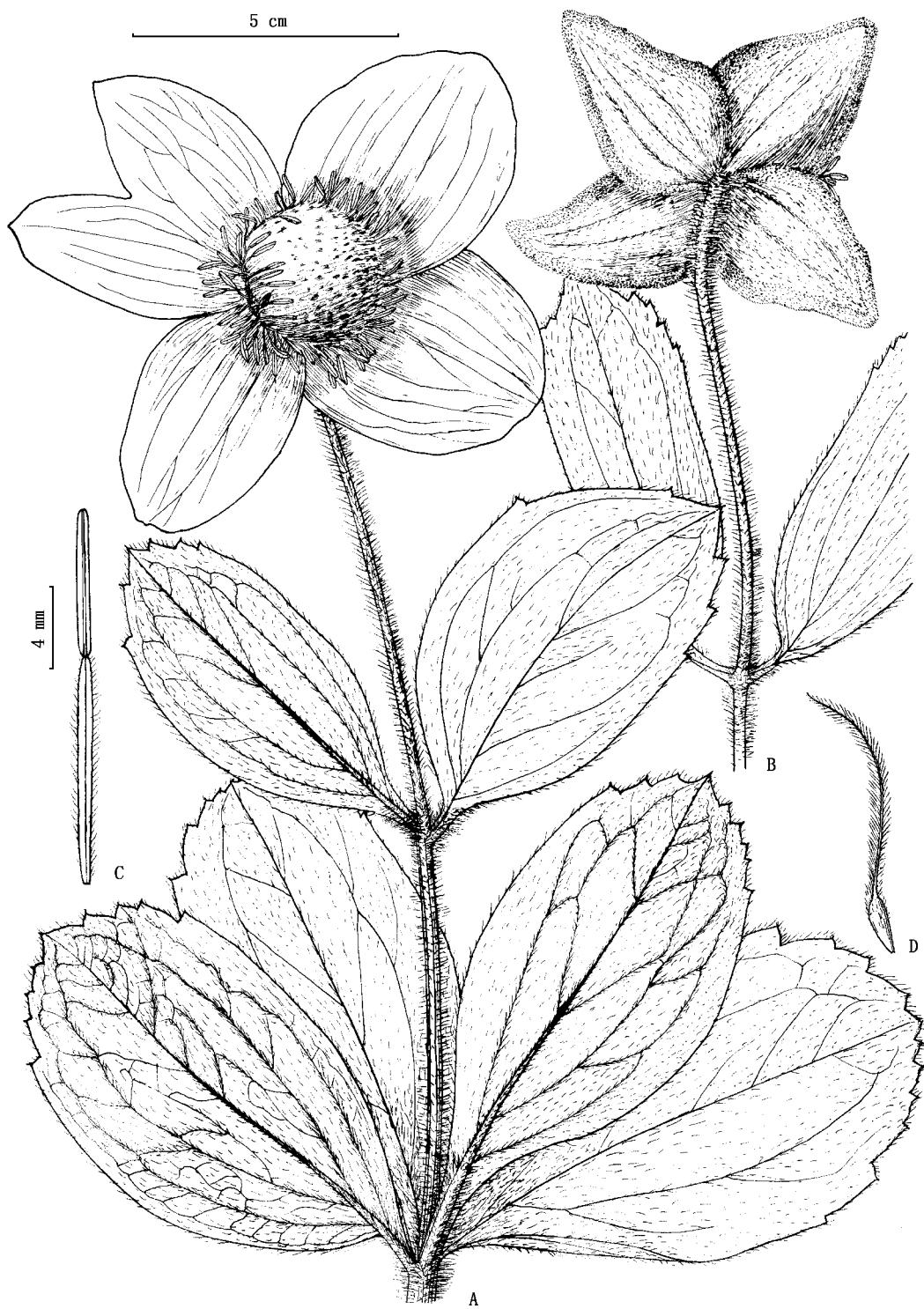


Fig. 10. *Clematis teuszii* (Kuntze) Engler. A, B, upper parts of two flowering stems; C, stamen (from Mechow & Teusz 305); D, achene (from Gossweiler 1469).

? *C. villosa* ssp. *chrysocarpa* var. *stipulata* Kuntze in l. c. — *C. chrysocarpa* var. *stipulata* (Kuntze) Durand & Schinz, l. c. Type: Angola. Without precise locality, Welwitsch 1222 p. p. (holotype, K).

? *C. villosa* ssp. *chrysocarpa* var. *angolensis* Kuntze in l. c. — *C. chrysocarpa* var. *angolensis* (Kuntze) Durand & Schinz, l. c. Type: Angola. Without precise locality, Welwitsch 1222 p. p. (holotype, B).

Clematopsis speciosa Hutch. in Bull. Misc. Inform. Kew 1920: 18, pl. 1, fig. 5. 1920, non *Clematis speciosa* (Makino) Makino, 1918; Exell & Mendonca in Carrasco, Consp. Fl. Angol. 1: 5. 1937; Exell et al. in Bull. Soc. R. Bot. Belg. 83: 424. 1951. — *Clematis angolana* M. Johnson, Klematis 145. 1997. Type: Angola. Without precise locality, Wellmann 1792 (holotype, K!).

This species consists of two subspecies, occurring on southern African mainland.

15a. ssp. *chrysocarpa*

Fig. 11: A – D

Small subshrub. Stem ca. 80 cm tall, 6–10-sulcate, yellowish pubescent, simple or few-branched. Leaves 3–5-foliate, shortly petiolate, with petioles ca. 1.5 cm long; leaflets papery or subcoriaceous, lateral ones usually sessile, oblanceolate, obovate-oblong, or long elliptic, 3–8.5–11) × 0.5–2.5–5 cm, apex acute, base cuneate or attenuate, margin above or near apex few-dentate, undivided, on both surfaces on veins appressed-pubescent or abaxially more densely hairy. Flower solitary, terminal, 5–10(–14) cm in diam. Sepals 4, white, thickly papery, ovate or elliptic-ovate, 3–5.5(–7) × 1.5–2.5(–3) cm, apex acute, inside sparsely puberulous, outside appressed-pubescent, along margin velutinous. Stamens 1.4–1.9 cm long; filaments narrowly linear or linear, pubescent; anthers linear, 6–7 mm long, apex obtuse or minutely apiculate. Ovaries densely pubescent; styles ca. 1.4 cm long, densely villous. Achenes compressed, oblanceolate, 9–11 × 2–2.2 mm, appressed-pubescent; persistent styles ca. 5 cm long, tawny-plumose. Fl. Oct. to Apr. of the next year.

Angola. In bushes; alt. 400–1400 m.

Additional specimens examined.

Angola. Benguella, Gossweiler 2153, 3642, Faulkner 491 (K); Bihe: Bie, Gossweiler s. n. (K, US).

Clematopsis speciosa Hutch. was reduced to the synonymy of *Clematis chrysocarpa* Welw. ex Oliv. by Brummitt (2000). Its flowering type specimen, Wellmann 1792, bears the flower about 14 cm in diam., being the largest in sect. *Pseudanemone*.

15b. ssp. *bijuga* Brummitt in Kew Bull. 55: 102. 2000, p. p. excl. syn. *Clematopsis lineariloba* Hutch. & Summ. Type: Malawi. Ntchisi Forest Reserve above Rest House, 1970-03-25, Brummitt 9372 (holotype, K!; isotype, UPS!); Fort Manning, Robson 1074 (paratype, K!). Mozambique. Niassa, from Marrupa to Lichinga, Janson & Boane 7882 (paratype, K!). Tanzania. Iringa, Bidgood, Congdon & Volleson 1306 (paratypes, MO!, UPS!). Zambia. Serenje, Brummitt et al. 16934 (paratypes, BR!, K!).

Fig. 11: E – G

This subspecies differs from ssp. *chrysocarpa* in its usually 5-, rarely 3- or 7-foliate leaves, smaller sepals (2–3.2 cm long), usually smaller anthers (3.5–5 mm long), and smaller obovate achenes (3.4–4.5 mm long). Fl. Dec. to Apr. of the next year.

Congo, Malawi, Mozambique, Tanzania, Zaire, and Zambia. In bushes or thickets; alt. 800–1750 m.

Additional specimens examined.



Fig. 11. *Clematis chrysocarpa* Welw. ex Oliv. A-D, ssp. *chrysocarpa*. A, upper part of flowering stem; B, leaf; C, stamen; D, achene (from Gossweiler s. n.). E-G, ssp. *bijuga* Brummitt. E, upper part of flowering stem; F, stamen (from Hilliard & Burtt 4454); G, achene (from Richards 10063).

Malawi. Chencerere Hill , Brummitt 10063 (K) ; Chitipa , Thompson et al. 6180 (K) ; Kasungu , Pawek 8894 (K) ; Mpoma , Phillips 1310 (K) ; Mzimba , Jackson 1576 (K) ; Ntchisi , Brummitt et al. 15601 (K , UPS) ; Nyika Plateau , Hilliard & Burtt 4454 , Brummitt 10922 (K).

Mozambique. Marrupa , Nuvungu 426 (K).

Tanzania. Mbeya , Bidgood & Congdon 147 (BR) ; Njombe : Kitulo , Cribb et al. 10789 (BR).

Zaire. Kaniama-Haut Lomami , Mullenders 162 , 1669 (BR).

Zambia. Abercorn , Richards 623 , 10063 , 12046 (K) ; Dobeka Bridge , Milne-Redhead 3538 (BR , K) ; Kasama , Angus 2707 , Brummitt 17058 (K) ; Isoka , Richards 10379 (K).

16. *Clematis katangensis* (Hutch.) M. Johnson , *Klematis* 151. 1997. — *Clematopsis katangensis* Hutch. in Bull. Misc. Inform. Kew 1920 : 19. 1920. Type : Zaire. Katanga : Loooi River , 1910-11 , Kassner 3347 (holotype , BM !).

Clematopsis homblei (De Wild.) Staner & Léonard Group B , Exell et al. in Bull. Soc. R. Bot. Belg. 83 : 422. 1951.

Clematis uhehensis auct. non Engler : Brummitt in Kew Bull. 55 : 105. 2000 , p. p. quoad syn. *Clematopsis katangensis* Hutch. et *Clematis katangensis* (Hutch.) M. Johnson.

Clematis homblei auct. non De Wild. : Grey-Wils. , Clematis 199. 2000 , p. p. quoad syn. *Clematopsis katangensis* Hutch.

Fig. 12

Small subshrub. Stem ca. 85 cm tall , shallowly 8 – 10-sulcate , sparsely puberulous on most part , near apex subvelutinous , simple , with ca. 7 pairs of leaves. Leaves pinnate , 3 – 5-foliate ; leaflets thickly papery , obovate-oblong , oblong , or narrowly obovate , 4.5 – 9.5 × 2 – 3.6 cm , apex acute , base cuneate or obtuse , margin above sparsely dentate , undivided , adaxially sparsely puberulous , abaxially reticulate , on veins and veinlets puberulous or glabrescent ; petioles wanting or present , up to 2.6 cm long. Flower singular , terminal , ca. 6.5 cm in diam. Sepals 4 , subcoriaceous , broadly ovate , ca. 3.4 × 2.5 – 3 cm , apex slightly acute , on both surfaces velutinous , outside with 5 prominent ribs. Stamens ca. 20 mm long ; filaments narrowly linear , below pubescent ; anthers narrowly linear , 8 – 9.5 mm long , apex obtuse. Ovaries densely pubescent ; styles 10 – 14 mm long , densely villous. Fl. Nov.

Zaire (Katanga).

In having leaves pinnate , sepals subcoriaceous , velutinous , outside 5-ribbed , and anthers the longest , *C. katangensis* is an advanced species of the section *Pseudanemone* .

Unclear taxon :

Clematis villosa* DC. ssp. *spathulifolia Kuntze in Verh. Bot. Ver. Brand. 26 : 173. 1885. — *Clematis spathulifolia* (Kuntze) Prantl in Bot. Jahrb. 9 : 258. 1888. — *Clematopsis spathulifolia* (Kuntze) Staner & Léonard in Bull. Soc. R. Bot. Belg. 82 : 339. 1950 , in obs. ; et in Robyns , Fl. Congo Belg. Ruanda-Urundi 2 : 198. 1951. Type : Congo. Without precise locality , Pogge s. n. (holotype , B). I have not seen any specimen of this taxon , and its relationship and systematic position in the section *Pseudanemone* are unknown to me.

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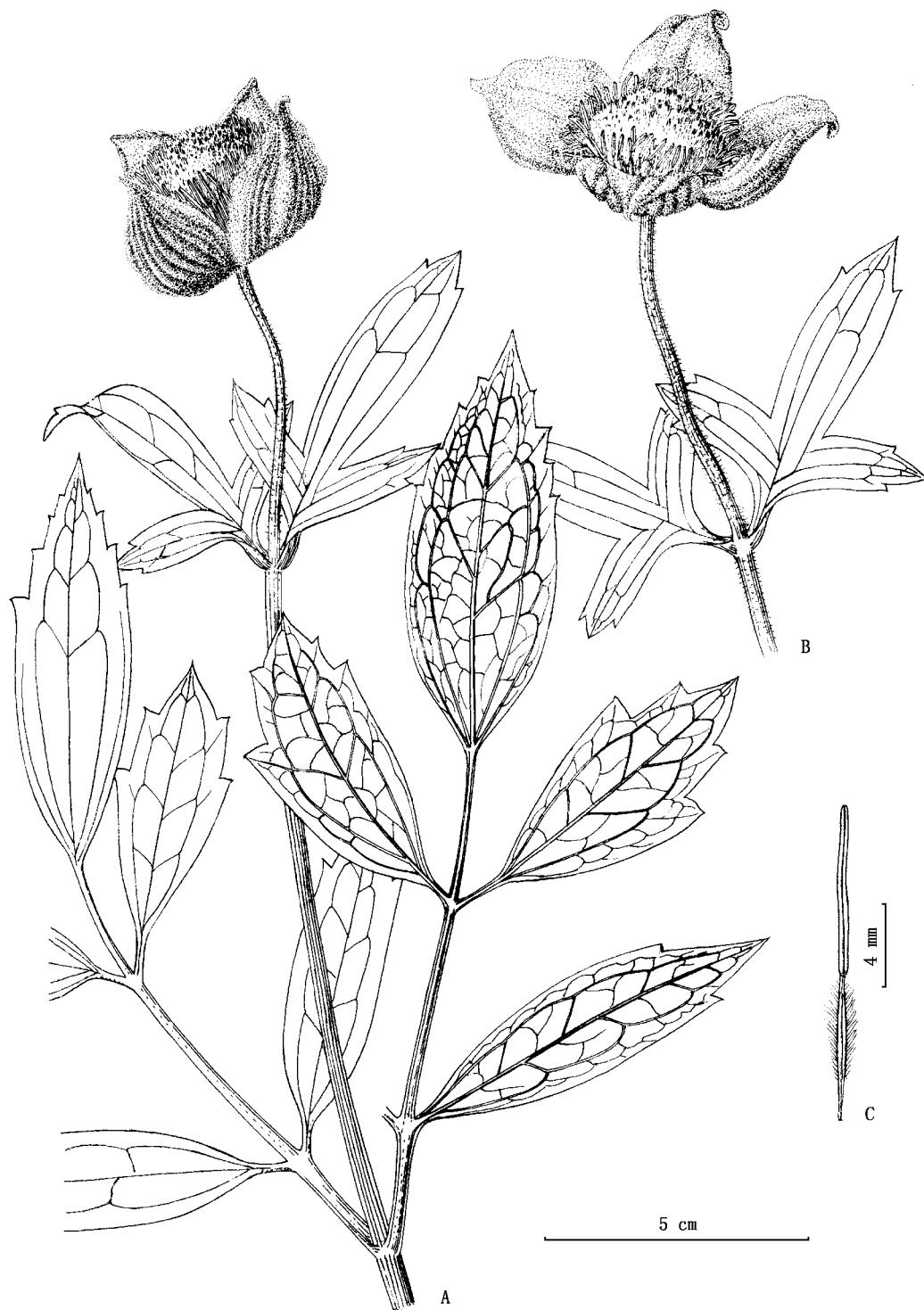


Fig. 12. *Clematis katangensis* (Hutch.) M. Johnson. A, B, upper parts of two flowering stems; C, stamen (from Kassner 3347).

References

Brummitt R K. 1976. A reconsideration of *Clematopsis* (Ranunculaceae) in Africa, with special reference to Malawi. *Kew Bulletin* 31: 156 – 162.

Brummitt R K. 2000. Inclusion of *Clematopsis* Hutch. in *Clematis* L. (Ranunculaceae). *Kew Bulletin* 55: 97 – 108.

De Candolle A P. 1818. *Clematis*. *Regni Vegetabilis Systema Naturale*. Paris. 1: 131 – 167.

Essig F B. 1991. Seedling morphology in *Clematis* (Ranunculaceae) and its taxonomic implications. *Sida* 14: 377 – 390.

Exell A W, Léonard J, Milne-Redhead E. 1951. Les espèces Africaines du genre *Clematopsis* Boj. ex Hutch. *Bulletin de la Société royale de botanique de Belgique* 83: 407 – 427.

Exell A W, Mendonca F A. 1937. *Clematopsis*. In: Carriso L W ed. *Conspectus Flora Angolensis*. Instituto Botânico de Coimbra, Portugal. 1: 4 – 7.

Exell A W, Milne-Redhead E. 1960. *Clematopsis*. In: Exell A W, Wild H eds. *Flora Zambesiaca*. London: Crown Agents for Overseas Governments and Administrations. 1: 93 – 96.

Godley E J. 1977. Imbricate sepals in *Clematis*. *New Zealand Journal of Botany* 15: 775 – 776.

Greuter W. 2000. International Code of Botanical Nomenclature (St. Louis Code). Königstein: Koeltz Scientific Books.

Grey-Wilson C. 2000. *Clematis* the genus. Portland, Oregon: Timber Press.

Hooker W J. 1837. *Clematis bojeri* Hook., *C. pimpinellifolia* Hook., *C. anethifolia* Hook., *C. trifida* Hook. & *C. oligophylla* Hook. *Icones Plantarum* 1: tab. 10, 77 – 80.

Hutchinson J. 1920. *Clematopsis*, a primitive genus of *Clematideae*. *Bulletin of Miscellaneous Information*, Kew 1920: 12 – 22.

Johnson M. 1997. Släktet Klematis. Södertelje: M. Johnsons Plantskola AB.

Kuntze O. 1885. Monographie der Gattung *Clematis*. *Verhandlungen des Botanischen Vereins für Brandenburg (Abhandlungen)* 26: 83 – 202.

Milne-Redhead E, Turrill W B. 1952. *Clematopsis*. In: Turrill W B, Milne-Redhead E eds. *Flora of Tropical East Africa: Ranunculaceae*. London: Crown Agents for Overseas Governments. 6 – 8.

Oliver D. 1868. *Clematis chrysocarpa* Welw. ex Oliv., *C. kirkii* Oliv. In: Oliver D ed. *Flora of Tropical Africa*. Ashford, Kent: L Reeve & Co., Ltd. 1: 4 – 8.

Perrier de la Bathie H. 1950. *Clematis*. In: Humbert H ed. *Flore de Madagascar et des Comores*, 76^e Famille—Renonculacées. Paris: Typographie Firmin-Didot et Cie. 6 – 27.

Prantl K. 1888. *Clematis*. Beiträge zur Morphologie und Systematik der Ranunculaceen. *Botanische Jahrbücher* 9: 325 – 373.

Raven P H, Axelrod D I. 1974. Angiosperm biogeography and past continental movement. *Annals of the Missouri Botanical Garden* 61: 569 – 673.

Raynal J. 1978. *Clematopsis*, genre africano-malgache: types biologiques et taxonomie. *Adansonia*, ser. 2, 18: 3 – 18.

Schneider C K. 1906. *Clematis*. *Illustriertes Handbuch der Laubholzkunde*. Jena: Verlag von Gustav Fisher. 1: 273 – 294.

Snoeijer W. 1992. A suggested classification for the genus *Clematis*. *Clematis*: 7 – 20.

Spach E. 1839. Trib. *Clematideae*. *Histoire des Naturelle végétaux*. Paris: Phanérogames. 7: 257 – 284.

Staner P, Léonard J. 1950. Observations sur quelques Ranunculaceae africaines. *Bulletin de la Société royale de botanique de Belgique* 82: 321 – 344.

Staner P, Léonard J. 1951. *Clematopsis*. In: Robyns F H E A W ed. *Flore du Congo Belge et du Ruanda-Urundi*. Brussels: Jardin botanique de l'Etat.

Tamura M. 1963. Morphology, ecology and phylogeny of the Ranunculaceae. II. *Osaka University Science Reports* 12: 146 – 150.

Tamura M. 1967. Morphology, ecology and phylogeny of the Ranunculaceae. VII. *Osaka University Science Reports* 16: 31 – 35.

Tamura M. 1987. A classification of genus *Clematis*. *Acta Phytotaxonomica Geobotanica* 38: 33 – 44.

Tamura M. 1995. *Clematis*. In: Heipko P ed. *Engler's Die Natürlichen Pflanzenfamilien*. 2nd ed. Berlin: Duncker & Humboldt. 17a (4): 368 – 387.

Tobe H. 1980. Morphological studies on the genus *Clematis* Linn. VII. Reinvestigation of *Clematis williamsii* A. Gray and proposal of its taxonomic transfer to *Clematopsis*. *Botanical Magazine (Tokyo)* 93: 135 – 148.

Viguier R, Perrier de la Bathie H. 1949. Observations sur les *Clematites* de Madagascar. *Mémoires de l'Institut Scientifique de Madagascar*, ser. B, 2: 219 – 237.

Wang W-T (王文采). 2000a. Notes on the genus *Clematis* (Ranunculaceae) (II). *Acta Phytotaxonomica Sinica* (植物分类学报) 38: 401–429.

Wang W-T (王文采). 2000b. Notes on the genus *Clematis* (Ranunculaceae) (III). *Acta Phytotaxonomica Sinica* (植物分类学报) 38: 497–514.

Wang W-T (王文采). 2001. A revision of *Clematis* sect. *Cheiropsis* (Ranunculaceae). *Acta Phytotaxonomica Sinica* (植物分类学报) 40: 193–241.

Wang W-T (王文采). 2003. A revision of *Clematis* sect. *Clematis* (Ranunculaceae). *Acta Phytotaxonomica Sinica* (植物分类学报) 41: 1–62, 97–172.

Wang W-T (王文采). 2004a. A revision of *Clematis* sect. *Aspidanthera* s.l. (Ranunculaceae). *Acta Phytotaxonomica Sinica* (植物分类学报) 42: 1–72, 97–135.

Wang W-T (王文采). 2004b. A revision of *Clematis* sect. *Brachiatae* (Ranunculaceae). *Acta Phytotaxonomica Sinica* (植物分类学报) 42: 289–332.

铁线莲属茴芹铁线莲组修订

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摘要 (1)对毛茛科铁线莲属 *Clematis* L. 的茴芹铁线莲组 sect. *Pseudanemone* 进行了分类学修订,确定此组包含约 16 种、3 亚种和 2 变种,写出了此组的分类学简史和地理分布,讨论了此组在铁线莲属的系统位置,将此组划分为 3 系,写出了分系、分种检索表,以及各种植物的形态描述、地理分布、生长环境等,并附有多幅插图。(2)本组植物的花具 4 枚平展的萼片,雄蕊花丝条形,被柔毛。在铁线莲属中,这样的花构造与对枝铁线莲组 sect. *Brachiatae* 的花较为相似。但本组植物为直立的亚灌木或小灌木,萼片常部分镊合状排列,部分覆瓦状排列,通常呈卵形或宽卵形,内面常密被短柔毛或短绒毛,雄蕊花药通常条形,较长,常长达 5–9.5 mm。因为具有这些较为特化的特征,此组遂比对枝铁线莲组为进化(在对枝铁线莲组,所有的种均为木质藤本植物,萼片 4 枚镊合状排列,通常呈长圆形,内面常被短柔毛,但不被短绒毛,雄蕊花药通常长圆形,较短,长 1–3 mm),可能由后者演化而来,因此,茴芹铁线莲组和对枝铁线莲组一样,也是属于铁线莲属中欧洲铁线莲演化干的一个成员。(3)如前所述,本组的萼片常部分镊合状排列,部分覆瓦状排列。在铁线莲属中,绣球藤组 sect. *Cheiropsis* 特产日本的单型亚组 subsect. *Williamsianae* 和单性铁线莲组 sect. *Aspidanthera* 特产新西兰的亚组 subsect. *Hexapetalae* 的萼片卷叠式也有类似情况,这说明在铁线莲属中不同演化干上出现的部分萼片呈覆瓦状排列的情况应当是次生的,而不是原初的现象。(4)根据萼片的毛被和花药的长度,本组被划分为 3 系:第 1 系,茴芹铁线莲系 ser. *Pimpinellifoliae*,是本组的原始群,含 7 种,特产马达加斯加中亚山区,其特征为萼片薄纸质,内面无毛或多少疏被短柔毛,花药条形或狭长圆形,长 2.2–4 mm。第 2 系,绒毛铁线莲系 ser. *Villosae*,含 3 种,特产非洲大陆中部及南部,其特征为萼片常较厚,呈纸质或亚革质,内面密被短绒毛或密短柔毛,花药通常条形,有时狭长圆形,长 2.5–4–5 mm。第 3 系,黄果铁线莲系 ser. *Chrysocarpe*,含 6 种,特产非洲大陆中部之南,其特征为萼片较厚,呈纸质或亚革质,内面通常被密短柔毛或短绒毛,只 1 种无毛,花药条形,在多数种长 5.8–7 mm,在特产扎伊尔南部的 *C. katangensis* 则长 8–9.5 mm,是茴芹铁线莲组中最长的花药。

关键词 铁线莲属; 茴芹铁线莲组; 分类学修订